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Final Report

## **The Supply Sector for the Commercial Fishing Fleet**

**Understanding Linkages between Commercial Fishing Operations, Support  
Businesses, & Coastal Communities**

Funded by:



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**Canada**

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## Executive Summary

The findings of this report are the result of work conducted by Counterpoint Consulting Inc and should not be construed as representing the opinions or positions of Fisheries and Oceans Canada.

The objective of this report is to enhance DFO's understanding of the linkages between commercial fish harvesting operations, support businesses that provide supplies and services to the commercial fishing fleet, and coastal communities. The goal of the work is "to develop ... more in-depth understanding of factors affecting support business viability; (commercial fishery) operational considerations as they relate to support businesses; and community reliance on commercial fishing support businesses."<sup>1</sup>

Sustaining a commercial fishing operation requires a wide range of supplies and services. Types of businesses that provide supplies and services to the commercial fishing fleet include:

- Marine fuel stations.
- Fishery monitoring firms.
- Bait suppliers.
- Ice suppliers.
- Net and fishing gear suppliers.
- Shipyards / boat ways.
- Boat builders.
- Marine electronics suppliers.
- Marine hardware suppliers.
- Engine suppliers.
- Refrigeration equipment suppliers.
- Mechanical, electrical, hydraulics, refrigeration parts and service.
- Metal fabricators.
- Fiberglass fabricators.
- Wood-workers.
- Commercial divers.
- Marine architects.
- Towing firms.

Businesses providing supplies and services range in size from substantial firms (eg, shipyards) to single tradespersons working from home or a small shop (eg, a welder).

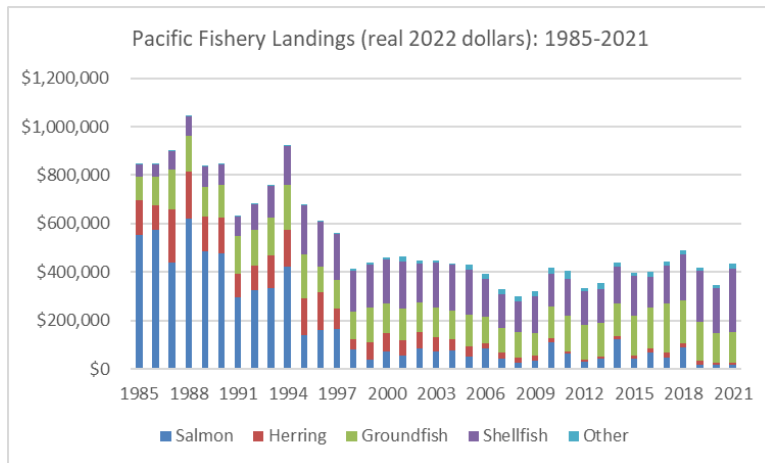
The gross revenues of the support businesses in the fleet's supply sector are derived from the expenditures of the commercial fishing fleet on supplies and services. We used the Fleet Financials models<sup>2</sup> which have been regularly updated in work with other clients, conducting a review of all fleet models for this analysis. Fleet expenditures for fishing gear, supplies and services (variable costs in economic parlance) were estimated separately from expenditures on vessel maintenance and upkeep (fixed costs).

For historical context, the following chart shows the landed value of the annual harvest in BC fisheries from 1985 to 2021, measured in real (ie, inflation adjusted) 2022 dollars.

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<sup>1</sup> DFO (2022), page 29.

<sup>2</sup> In this report, "Fleet Financials" and "Fleet Financials Report" refers to Nelson (2009) and Nelson (2011).



The inflation-adjusted landed value of the BC harvest of salmon, herring, groundfish, and shellfish has declined by about one-half over the 37 year period shown, from a 1985-94 average of (2022) \$831 million to a 2012-2021 value of \$405 million.

The displacement of capital and labour from the fishery is the first and obvious impact of this curtailment but the commercial fishing fleet supply sector — businesses providing supplies and services to the commercial fleet — has unavoidably been affected because the expenditures of the commercial fishing fleet on supplies and services constitute the revenues of the businesses that provide those inputs.

The current state of the supply sector is the result of decades of fishery and management changes focused on solving the common property problem, rationalizing the fleet, reducing pressure on the resource, and improving the economics of the fishery. Those myriad and diverse initiatives have resulted in far fewer (active) vessels in the commercial fleet and much improved economics reflected in higher margins, which in turn imply lower expenditures for a given harvest value.

Supply sector revenues derived from commercial fishery fishing and vessel expenditures are shown in the following table.

| Items                                     | Revenues            |
|---|---------------------|
| Fuel                                      | \$18,446,274        |
| Groceries                                 | \$6,801,301         |
| Bait                                      | \$5,635,844         |
| Gear                                      | \$4,014,548         |
| At-sea monitoring                         | \$3,900,027         |
| Ice                                       | \$1,498,436         |
| Offload monitoring                        | \$981,447           |
| <b>Revenues from Fishing Expenditures</b> | <b>\$41,277,878</b> |
| R&M Expenditures (including capital)      | \$35,160,869        |
| Insurance                                 | \$5,336,801         |
| Shoreside Services                        | \$2,094,846         |
| Moorage                                   | \$1,995,015         |
| Miscellaneous                             | \$1,076,105         |
| <b>Revenues from Vessel Expenditures</b>  | <b>\$45,663,637</b> |
| <b>Total Revenues</b>                     | <b>\$86,941,514</b> |

Source: Counterpoint

Fuel is the top fishing expenditures revenue source for support sector businesses, followed by groceries and bait. Revenues derived from vessel expenditures are dominated by repair & maintenance (which here include capital R&M expenditures).

The following table lists the top five fisheries, based on 2021 data, in descending order in terms of supply sector revenues.

| Fishery          | Revenues            | % of Total Revenues |
|------------------|---------------------|---------------------|
| Groundfish trawl | \$21,347,800        | 24.6%               |
| Crab             | \$19,269,540        | 22.2%               |
| Prawn            | \$9,368,750         | 10.8%               |
| Halibut          | \$7,014,830         | 8.1%                |
| Sablefish        | \$4,754,740         | 5.5%                |
| <b>Total</b>     | <b>\$61,755,660</b> | <b>71.0%</b>        |

Source: Counterpoint

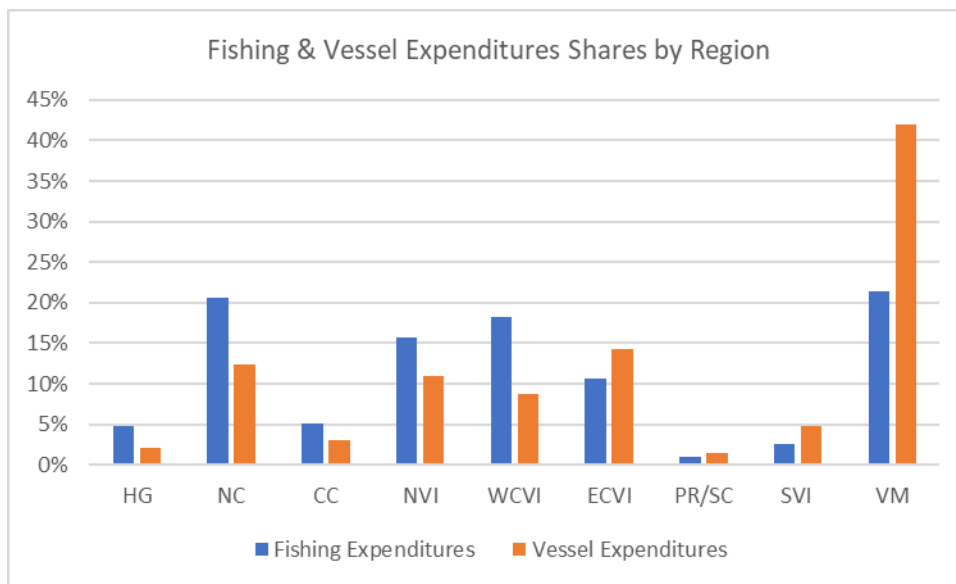
Together, these five fisheries account for 71% of the gross revenues of support sector businesses in BC.

In addition to quantifying the revenues of the commercial fleet's supply sector, we estimated the distribution of fishing and vessel expenditures across nine regions of coastal British Columbia (the regions were defined by DFO).

| Region                      | Acronym | Revenues            | % of Total  |
|-----------------------------|---------|---------------------|-------------|
| Vancouver Metro             | VM      | \$28,021,824        | 32%         |
| North Coast                 | NC      | \$14,130,860        | 16%         |
| West Coast Vancouver Island | WCVI    | \$11,515,093        | 13%         |
| Northern Vancouver Island   | NVI     | \$11,463,512        | 13%         |
| East Coast Vancouver Island | ECVI    | \$10,953,983        | 13%         |
| Central Coast               | CC      | \$3,532,715         | 4%          |
| Southern Vancouver Island   | SVI     | \$3,258,579         | 4%          |
| Haida Gwaii                 | HG      | \$2,960,652         | 3%          |
| Powell River/Sunshine Coast | PR/SC   | \$1,104,298         | 1%          |
| <b>Total</b>                |         | <b>\$86,941,514</b> | <b>100%</b> |

Source: Counterpoint

As shown in the following chart, fishing expenditures tend to occur where fishing takes place, and vessel expenditures are concentrated in populous areas, especially Vancouver Metro (VM).



To add context and first-hand experience, we reached out to industry participants we know, conducting informal interviews seeking their views on the state of the commercial fleet’s supply sector and its evolution over time. In doing so, we were introduced to several owners of support businesses who we also interviewed.

The market for provision of supplies and services to the commercial fishing fleet has shrunk significantly over the past several decades. But other marine sectors have seen stability or growth.

- Aquaculture — particularly salmon farming, but also shellfish.
- Tourism activities such as whale-watching and sea lion tours.
- Surveys and environmental studies linked to oil & gas, LNG, mining developments.
- Marine spill / clean-up initiatives.

Growth in non-fishing marine sectors has provided opportunities for firms in the commercial fishery support segment as follows:

- A large number of commercial fishery support businesses were highly specialized in the commercial fishing sector. Many of these have had to shut down as aggregate commercial fleet

expenditures plummeted. This would be particularly true in small or remote coastal communities.

- Some support businesses were simply not equipped or qualified to provide supplies and services to other (growing) marine sectors, even if they wished to.
- Some support businesses have replaced a portion of lost fishing business with business from other marine sectors but now operate at a smaller level.
- Some support businesses have pivoted away from the commercial fishery and now focus on other marine sectors.
- As non-fishing marine sectors grew, some businesses in these sectors intentionally opted not to utilize the services of commercial fishing industry providers. This was particularly true in the farmed salmon sector, where many supply inputs (eg, feed, gear) were brought by foreign owners and commercial fishery practices were considered incompatible with aquaculture.

The industry participants we interviewed reported countless closures of commercial fishery supply sector businesses. Inevitably, as the number of support sector businesses has declined, service levels have dipped. Some of the ways in which lower service levels have impacted the fleet are:

- Fewer fuel stations. Prince Rupert, for example, has only a single fuel station, meaning long line-ups during busy periods. The commercial fleet has no priority over recreational craft. Closure of many coastal fuel stations means vessels need to run further to fuel up. For some small vessel operators, especially in remote communities, this can shape fishing plans and result in higher fuel bills because of increased travel distances.
- Fewer tradespersons, even in the employ of boatyards. In some cases, fishers must bring in their own trades people to work on their vessels, even while the boat is in drydock.
- Gear suppliers tend to carry little or no inventory, so wait times are considerable. Fishers may need to use make-shift arrangements, or tie-up, until they get the gear they need.
- Fewer net lofts/gear storage facilities, meaning fishers either run longer distances to switch nets, or they make do with less satisfactory arrangements (eg, storing gear outdoors on their own property).
- Fewer buyer/processing outlets. Processors in the past provided a lot of services to the fleet — either directly, or through provision of working capital. Now, fishers largely make their own arrangements. Fewer plants and offloading stations mean the fleet may need to travel further to unload its catch.

Virtually all types of fleet support businesses have declined over the last thirty years, the sole exception being the growth of dockside and at-sea monitoring and validation firms.

Fishers reported that they noticed a marked decline in overall service levels — and an exodus of businesses — by the early 2000s, several years after major events in the salmon fishery, including the Mifflin Plan in 1996, the “Coho Crisis” of 1998, and several rounds of salmon licence retirements. While salmon fishery events were a major causal effect, the impact of roe herring switching from a derby fishery to pools (1998) has been significant, too. The move to individual quota management in groundfish fisheries was no doubt a major contributor to the sea change in the supply sector but being a lower profile fishery than salmon or (roe) herring, received less attention.

What is the adequacy of the current level of supply services for the fleet? The feedback we received from the industry participants we interviewed is summarized below:

- For some small operators in remote areas, significant adjustments to fishing plans need to be made due to a paucity of services.
- For the bulk of fishers, the new reality is that individuals need to be prepared, plan ahead, carry some inventory of parts, supplies, and even fuel, and hope to avoid breakdowns. Breakdowns today can result in far more lost fishing time than in the past. More so than in the past, fishers may need to wait to get the goods and services they need. The skillsets required to be a successful fisher have expanded over the years.
- Overall, fishers can generally still cope — the business of catching fish continues — but they worry that continued declines in service levels will materially compromise their ability to conduct business.

The inescapable conclusion is that the supply sector has seen a contraction roughly in proportion to that seen in the commercial fishing fleet, which is to say, dramatic. We estimate that the supply sector today (2021) has shrunk by over \$150 million in the salmon fishery alone compared to 1991. The job loss accompanying such diminution of activity, while not estimated, is substantial.

While we have provided a more in-depth understanding of the linkages between commercial fishing operations and support businesses, lack of data prevented us from extending the linkages to individual coastal communities.

The commercial fishing industry in BC is very concerned about the status and sustainability of its supply sector, so more work on harvesting–supply sector linkages is needed, to better understand both the state of the supply sector and how best to address its sustainability and ability to provide timely and reasonably priced supplies and services to the commercial fleet.

The next step, in our view, is to extend this initial analysis of linkages between the commercial harvesting sector and its supply sector, and then to devise and implement whatever policies, programs, and initiatives that are needed to ensure that the supply sector can function efficiently and effectively to support commercial fishers.

We address the data and analysis issues in our recommendations.



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## Acronyms & Terms

**Table 1: Acronyms & Terms**

| Acronym/Term              | Meaning   |
|---------------------------|---|
| Access                    | See Commercial Fishing Access   |
| Active Vessels            | Those vessels in a licensed commercial fishery that recorded landings in a given year   |
| Commercial Fishing Access | Commercial fishing licences and quota   |
| Daajing Giids             | Queen Charlotte City  |
| EBITDA                    | Earnings before Interest, Taxes, Depreciation, and Amortization, a measure of earnings or net income.   |
| Economic multipliers      | See Multipliers   |
| EIA                       | Economic Impact Analysis  |
| FRC                       | Fisher Registration Card  |
| IQs                       | Individual quotas   |
| ITQs                      | Individual transferable quotas  |
| LNG                       | Liquified Natural Gas   |
| Multipliers               | Economic summary statistics applied to the gross revenues or expenditures of a business, industry, or sector to quantify measures of the total economic activity it generates through its own production (direct impacts), all the businesses and sectors in its supply chain (indirect impacts), and the spending of those employed directly or indirectly (induced impacts).                          |
| PFAR                      | Pacific Fisheries Adjustment & Restructuring Plan   |
| PSSI                      | Pacific Salmon Strategy Initiative  |
| RFP                       | Request for Proposals   |
| SCH                       | Small Craft Harbour   |
| SCH Capacity              | The length of floats at the harbour, measured in metres, that are available for moorage. The physical length of floats is doubled (tripled) where double (triple) rafting is possible and permitted. Physical float length is reduced to account for space between vessels and spots where mooring is not possible, such as mooring piles, ladders, and corners where finger floats meet header floats. |
| SCH High Use              | The typical length of floats used during the harbour busy season (whenever that might be). High Use less than harbour capacity indicates that a harbour is underutilized.   |
| TAC                       | Total Allowable Catch   |
| Total Allowable Catch     | Of the total abundance of a given fish stock or species, the biomass that is available for harvest in any given year.   |

*Source: Counterpoint*

## Introduction

The findings of this report are the result of work conducted by Counterpoint Consulting Inc and should not be construed as representing the opinions or positions of Fisheries and Oceans Canada.

The modern evolution of commercial fisheries in British Columbia, from the late 1960s to the present day, runs from almost unfettered access (often called open access) through limited entry licensing and restrictions on fishing inputs such as vessel length and fishing gear (ie, mesh sizes, barbless hooks), to control of fishing outputs (catch) using individual transferable quotas (ITQs).

Fleet management measures were employed in some fisheries such as area licensing in the commercial salmon fishery and vessel/licence pooling in the herring roe fishery.

Salmon abundance issues in the 1990s led to commercial fishing licence buyback programs and culminated in the “coho crisis” of 1998 and the initiation of “selective fishing” in the salmon fishery.

The displacement of capital and labour from the fishery is the first and obvious impact of this curtailment but the commercial fishing fleet supply sector — businesses providing supplies and services to the commercial fleet — has unavoidably been affected because the expenditures of the commercial fishing fleet on supplies and services constitute the revenues of the businesses that provide those inputs.

From time to time, DFO estimates the dimensions of the support sector using economic multipliers to quantify measures such as jobs and employment created, household incomes generated, and the sector’s contributions to Gross Domestic Product (GDP) and government revenues (taxes). Multipliers applied to the commercial fleet’s revenues or expenditures yield estimates of the total economic activity the commercial fleet generates through its expenditures to purchase supplies and services from its support sector (direct impacts), all the businesses and sectors in its supply chain, working back from its support sector (indirect impacts), and the spending of household incomes by those employed directly or indirectly (induced impacts).

The commercial fishing industry is concerned about the decline of its support sector, its current fragile state, and its future ability to continue providing supplies and services to the commercial fleet. Available data on support businesses are scant. Thus, in October 2022, DFO issued a Request for Proposals (RFP) titled *Understanding Linkages between Commercial Fishing Operations, Support Businesses, and Coastal Communities*. “Available data on the support businesses do not lend themselves well to illustrating community reliance on commercial fishing sector or to identifying specific service access points that are critical to fishing operations, or other specific linkages.”<sup>3</sup>

The purpose of this analysis is “to develop ... more in-depth understanding of factors affecting support business viability; operational considerations as they relate to support businesses; and community reliance on commercial fishing support businesses.”<sup>4</sup> This project is DFO’s first step toward achieving those end points.

We report our estimates of the magnitude and distribution of support sector revenues across nine coastal regions of British Columbia and describe current industry concerns regarding the support sector, as well as some insight into the evolution of the support sector over the past three decades, as revealed in interviews with industry and support sector participants.

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<sup>3</sup> DFO (2022).

<sup>4</sup> DFO (2022), page 29, emphasis added.

Our overarching conclusion is that our findings represent a first step and that more work needs to be done gathering data on the support sector before analyses such as these can provide a basis for policy recommendations. Thus, our recommendations are focused on potential areas for future analysis and data that could be collected in the interim to improve the prospects for achieving the goals of this project. Our recommendations are structured under three headings.

- Factors affecting support businesses viability
- Operational considerations as they relate to support businesses
- Community reliance on support businesses

DFO defines “operational considerations as they relate to support businesses” as “whether changes to the supply sector constrain fishing activities (operations) and through which mechanisms.” Thus, the three goals listed above translate directly into paying attention to the three sectors that are the focus of this analysis.

- Supply sector
- Commercial fishing fleet
- Coastal communities

The report is structured as follows:

- **Linkages** between the commercial harvesting sector and the supply sector.
- **Approach & Data Sources** for quantifying and describing the effects of changes in the Pacific fishery on its supply sector.
- **Historical Context** to set the stage for our analysis.
- **Quantitative Findings** including estimates of revenues of supply sector businesses, by fishery, fishery group, and region.
- **Qualitative Findings** including experiences of commercial fishers and supply sector businesses
- **Conclusions**
- **Recommendations**

## Linkages

Linkages influencing the commercial fishery support services sector are illustrated in Figure 1.

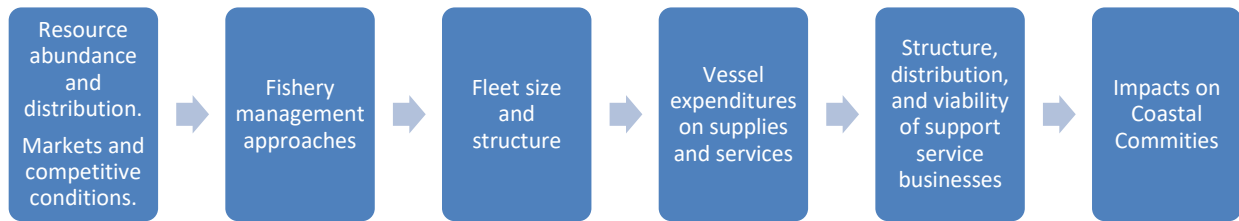


Figure 1: Commercial Fishery — Support Sector Linkages

### *Resource & competitive factors*

The state of the resource and the state of seafood markets, which together constitute the business environment for the commercial fishing fleet, are the starting point for the linkages that run through the harvesting sector to the supply sector. The state of various resources, and the amount of money that can be earned through harvesting them, has strong repercussions through the chain. These are external factors, largely beyond the control of government and industry in the Pacific fishery.

### *Fishery management approaches*

This history of commercial fisheries management on Canada's Pacific coast is reviewed in Pearse (1982) and Swenerton (1993).

As mentioned at the outset of this report, the evolution of Pacific fisheries management has been from open access through limited entry licensing and fishing input controls, to control of fishing output via individual (transferable) quotas. The trend has not been smooth and continuous, however, and changes have not occurred simultaneously in all fisheries.

Additional fishery management measures introduced at various times include licence retirement programs, reductions in fishing time/area, single gear licensing, licence pooling, area licensing, licence and/or quota stacking, and selective fishing.

For salmon and herring fisheries, the motivation was principally trying to stem the common property problem, which has both biological and economic repercussions. Such fishery management measures reduced fishing pressure on the resource in the short term and rationalized incentives and fleet economics in the longer term.

For groundfish, halibut, and sablefish, the motivations for management changes included concerns for safety, shortened seasons (halibut/sablefish), checking growth in fishing power, poor or incomplete catch data (ie, misreported, unreported retained and released catch), and enforceability of the management plan.

Broadly speaking, and with some exceptions, limited entry licensing was introduced in the 1970s (rockfish, prawns, crab, urchins and cucumbers in the early 1990s). Licence buybacks in the salmon fishery occurred in 1971-1974 under the Davis Plan, 1996 under the Mifflin Plan, and 1998 under the Pacific Fisheries Adjustment & Restructuring Plan (PFAR). With the exceptions of herring spawn-on-kelp and abalone (1975 and 1979, respectively), individual quotas were introduced in the 1990s for groundfish (trawl, halibut, and sablefish) and shellfish (geoduck, urchins and sea cucumbers).



### ***Fleet size and structure***

Given licence retirements in the salmon fishery, new fishery management regimes (of different kinds) in all fisheries, and (salmon) resource/market outlook, vessel owners made business decisions that have resulted in a far smaller active fishing fleet today compared to what was seen, say, 30 years ago.

A key strategy for remaining participants has been to stack as many licences and quotas aboard individual vessels as possible (across species/fisheries and across areas in area-licensed fisheries).

Emphasis has shifted from spending money on vessel and gear to investing in licences and quotas. Many vessel owners simply tie up their boats and lease their access to active fishers. In some fisheries today, inactive licensed vessels, once a rarity, are now in the majority.

### ***Vessel expenditures on support services***

Downward pressure on vessel expenditures is driven not only by fewer vessels in aggregate, as described above, but also by incentives to spend less money per vessel than in the past. In the open access and even limited-entry fisheries of days gone by, the condition and competitiveness of the vessel and fishing gear were important determinants of success. Breakdowns were costly as lost fishing time could not be recouped. Spending money on bigger, stronger, faster, better equipment — including sonars and other fish-finding equipment — was a core strategy for fishers. Such spending — to win the race for the fish — was the way in which economic rents in open access and limited entry fisheries were dissipated.

In non-competitive fisheries, primarily managed these days by individual quotas, the time urgency surrounding fisheries has eased, meaning that the necessity to have a vessel fully ready to participate in the fishery before every opening has lessened. A lot of working capital has been diverted to assembly of licences and quotas, manifested in year-to-year leases. This is true, not just for annual expenses of a fishing operation, but for capital expenditures as well: very few vessels have been built in the last 30 years, but a lot of money has been invested in acquisition of licences and quotas.

### ***Structure, distribution, and viability of support services businesses***

Aggregate expenditures by the fleet represent the revenue pool for support businesses serving the commercial fishing industry. Just as the fleet restructures in response to resource, market, and management changes, so too must the service sector adapt to a shrinking pool of active fishing vessels and declining expenditures by the commercial fleet on supplies and services. Adaptations include diversifying into other revenue streams (eg, the recreational, aquaculture, and marine transport sectors), consolidating to fewer or smaller locations, or exiting from the business.

The flip side of this coin, and a feedback loop in linkages between the commercial fleet and the fleet supplies and services sector, is whether the support sector is adequate to support the fleet, especially the current level of support services available to the fleet near the fishing grounds.

### ***Impacts on coastal communities***

The fishing industry has traditionally been important to communities dispersed throughout the BC coastline. The smaller a community, the more important seemingly small amounts of economic activity can be. It is often heard that fishing communities have been deeply affected by fleet rationalization and consolidation, and it follows that fleet support sector rationalization has contributed as well.

## Approach & Data Sources

In this section we describe our approach to quantifying the linkages described above so as to describe the current scope and distribution of revenues accruing to support businesses providing supplies and services to the commercial fishing fleet.

### Fisheries

The commercial fishery in BC is made up of twenty-four fisheries (or sub-fisheries). Given data limitations, we have combined the four herring fisheries (roe, spawn-on-kelp, food & bait, and special use) under a single “Herring” heading. Table 2 shows the full list of fisheries.

**Table 2: BC Fisheries and Sub-Fisheries**

| Group                                     | Fishery            | Licence |
|---|--------------------|---------|
| Salmon                                    | Salmon Gillnet     | AG      |
|   | Salmon Seine       | AS      |
|   | Salmon Troll       | AT      |
| Groundfish Hook & Line <sup>5</sup> /Trap | Halibut            | L       |
|   | Sablefish Trap     | K       |
|   | Sablefish Longline | K       |
|   | Rockfish Inside    | ZNI     |
|   | Rockfish Outside   | ZNO     |
|   | Lingcod            | LC      |
| Groundfish Trawl                          | Groundfish Trawl   | T       |
|   | Hake Trawl         | T       |
| Shellfish Trap & Trawl                    | Prawn              | W       |
|   | Crab Area A        | R       |
|   | Crab Areas B-J     | R       |
|   | Shrimp             | S       |
| Shellfish Dive                            | Geoduck            | G       |
|   | Green Sea Urchin   | ZA      |
|   | Red Sea Urchin     | ZC      |
|   | Sea Cucumber       | ZD      |
| Pelagics                                  | Tuna               | CT      |
|   | Herring Roe        | HS, HG  |
|   | Food & Bait        | ZM      |
|   | Spawn-on-kelp      | J       |
|   | Special Use        | ZY      |

Source: Counterpoint

### Fishing Regions

We were asked to assess the distribution of support sector revenues among fishing regions in British Columbia. For this project, those regions were defined by DFO. They are listed in Table 3 below along with acronyms and corresponding BC Regional Districts. We use the terms “fishing regions” and “regions” synonymously throughout this report to refer to the Project Fishing Regions listed in the first column of Table 3. When we refer to the BC Regional Districts (listed in the right-most column of Table 3), we use the term “Regional Districts.”

<sup>5</sup> Hook & Line includes longline and gang troll gear. Lingcod is a gang troll fishery.

**Table 3: Fishing Regions in BC used for this Project**

| Project Fishing Regions     | Acronyms | Regional Districts                     |
|-----------------------------|----------|--|
| Haida Gwaii                 | HG       | North Coast                            |
| North Coast                 | NC       | North Coast, Kitimat-Stikine           |
| Central Coast               | CC       | Central Coast                          |
| Northern Vancouver Island   | NVI      | Mt Waddington, Strathcona              |
| West Coast Vancouver Island | WCVI     | Alberni-Clayoquot                      |
| East Coast Vancouver Island | ECVI     | Comox Valley, Nanaimo, Cowichan Valley |
| Powell River/Sunshine Coast | PR/SC    | qathet, Sunshine Coast                 |
| Southern Vancouver Island   | SVI      | Capital                                |
| Vancouver Metro             | VM       | Metro Vancouver, Fraser Valley         |

*Source: DFO, Counterpoint Consulting Inc*

Fishing regions for this report were defined in terms of (or with reference to) Regional Districts because socio-economic information is gathered and organized in terms of Regional Districts. This links the analysis and discussion of the commercial fishing support sector to data and analysis of the local economies of these regions.

The four northernmost fishing regions listed in Table 3 — Haida Gwaii, North Coast, Central Coast, and Northern Vancouver Island — are defined to align with the planning sub-regions of the MPA Network endorsed by planning partners in February 2023, as per the following points:

- Haida Gwaii is a separate fishing region from the North Coast fishing region although both are included in the North Coast Regional District.
- The North Coast fishing region therefore refers to the mainland section only of the North Coast Regional District.
- Only the coastal portion of the Kitimat-Stikine Regional District is included in the North Coast fishing region.
- The Northern Vancouver Island fishing region includes the Strathcona Regional District, meaning that Campbell River is in the NVI fishing region.

### ***Fleet Financial Profiles (2021)***

To identify the aggregate level of fleet expenditures on supplies and services by region, we built financial models for each of the fisheries (except Herring<sup>6</sup>) listed in Table 2 above. Those models are based on the Fleet Financial Profiles 2007 and 2009 prepared by Nelson for DFO.<sup>7</sup> Through work with other clients, we have regularly updated cost data, and for this assignment, conducted another review of pertinent assumptions.

The financial models generate income statements for each fishery category, including the detailed line items for fishing (variable) and vessel (fixed) expenses. From these income statements, we:

- Pulled out the expenditures that make up the revenues of support sector businesses.
- Excluded expense line items that are not paid to supply businesses: licence/quota fees payable to DFO and licence/quota lease transactions among access holders.
- Added groceries which are paid for out of crew shares and so are not listed in the Fleet Financials models as fishing or vessel expenses.

<sup>6</sup> Harvest data in herring fisheries is gathered by DFO Fishery Management Branch and does not include data on the number of vessels, which precludes construction of fleet financial models for herring fisheries.

<sup>7</sup> Nelson (2009) and Nelson (2011).

- Added in R&M capital costs that accrue as revenues to support sector businesses that would not appear in an income statement because capital costs cannot be expensed; they have to be depreciated.
- Allocated relevant expenditures, by fishery, to each of the nine fishing regions.

Details are provided in Appendix A (page 36).

Updating the Fleet Financials models was a step to getting the data we needed for our analysis, rather than the reason for the analysis, so we focus on the revenues of supply sector businesses in this report.

Table 4 shows commercial fleet support sector businesses' revenues from fishing expenditures.

**Table 4: Revenues from Fishing Expenditures**

| <b>Revenues from Fishing Expenses</b> |
|---------------------------------------|
| Fuel                                  |
| Groceries                             |
| Gear                                  |
| Bait                                  |
| Ice                                   |
| At-sea monitoring                     |
| Offload monitoring                    |

*Source: Counterpoint*

Similarly, Table 5 shows support sector revenues derived from commercial fleet vessel costs.

**Table 5: Revenues from Vessel Expenditures**

| <b>Revenues from Vessel Expenses</b> |
|--------------------------------------|
| R&M (including capital)              |
| Insurance                            |
| Shoreside Services                   |
| Moorage                              |
| Miscellaneous                        |

*Source: Counterpoint*

## Interviews

In addition to soliciting fishers for cost data to inform our financial model, we interviewed commercial fishers and supply business owners to get their takes on the state of the support business sector.

We did not conduct a formal survey, nor did we attempt to conduct a random sample survey. We simply reached out to industry participants we knew seeking their experiences with support sector businesses and the evolution of the sector over time. Occasionally, interviewees suggested others we should talk to, some of whom were not formerly known to us. For the most part, we interviewed commercial fishers but we did talk to several owners of support sector businesses. In total, we talked to a dozen individuals, all of whom told us the same story. Their thoughts are reported in the Qualitative Findings section below (page 27).

We learned about real world examples of adaptive strategies adopted by commercial fishing supply sector businesses in the face of ongoing reductions in the number of customers over time and reductions in revenues from commercial fishing customers still in the game.

## ***Allocations of Expenditures Among Fishing Regions***

For each commercial fishing fleet, we estimated the distribution of fishing and vessel expenditures among the nine fishing regions.

We began by positing that fishing expenses and vessel expenses would have different distributions among regions: that vessel expenditures would be more closely tied to one's home port and that fishing expenditures would be more closely tied to where fishing occurs, the routes by which vessels transit to and from fishing grounds, and points of delivery. This approach was supported by our interviews with commercial fishery participants.

We also considered landings data by fishery by region<sup>8</sup> provided by DFO but that data excluded some key species, and disclosed only the points of landings, not the locations of harvesting. For instance, the data indicated only 35 tonnes of landings in Haida Gwaii, while we recognize that these waters host a great deal of fishing activity and volume of harvest. Thus, the DFO data provided a reference point for our regional distributions of fishing expenses but was not the sole determinant.

Our regional distributions of fleet expenditures rely on a modeling methodology and key assumptions. We are comfortable that regional distributions are reasonable. However, because of data limitations we were not comfortable with trying to allocate fleet expenditures down to individual ports or communities.

## ***Regional Profiles***

To facilitate understanding the scale of fishing activity and fleet expenditures, we provide a host of information for each of the nine fishing regions.

We drew upon data provided by DFO to summarize, by region:

- Population.<sup>9</sup>
- FRC counts by community.<sup>10</sup>
- Small Craft Harbour (SCHs) by community including size (berthage) data.<sup>11</sup>

We obtained data online on:

- Provincially-licensed fish processing plants by type and location.
- Federally-licensed fish processing plants by type and location.

From our analysis we provide results for each region on:

- Supply business revenues by fishery.

Regional Profiles are found in Appendix B (page 38).

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<sup>8</sup> DFO landings data by fishing region are shown in Appendix C (page 49).

<sup>9</sup> British Columbia (2023).

<sup>10</sup> Data provided by DFO.

<sup>11</sup> DFO (2023).

## Historical Context

To provide background and set the context for this assessment of the commercial fleet’s supply sector, we next review selected historical data on the Pacific commercial fishery since the mid-1980s.<sup>12</sup>

### Trends in Annual Landings

Annual landings in British Columbia commercial fisheries from 1985-2021 are shown in Figure 2.

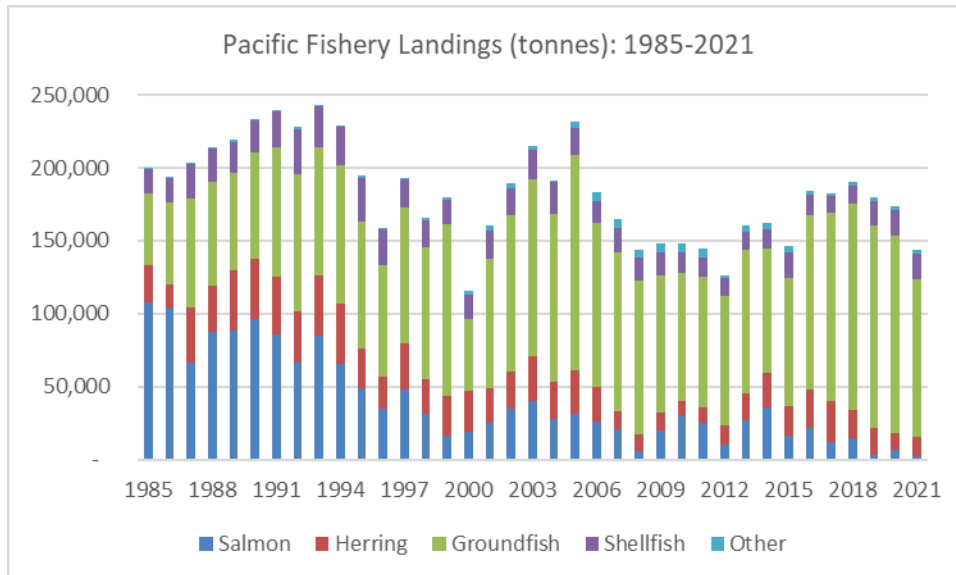
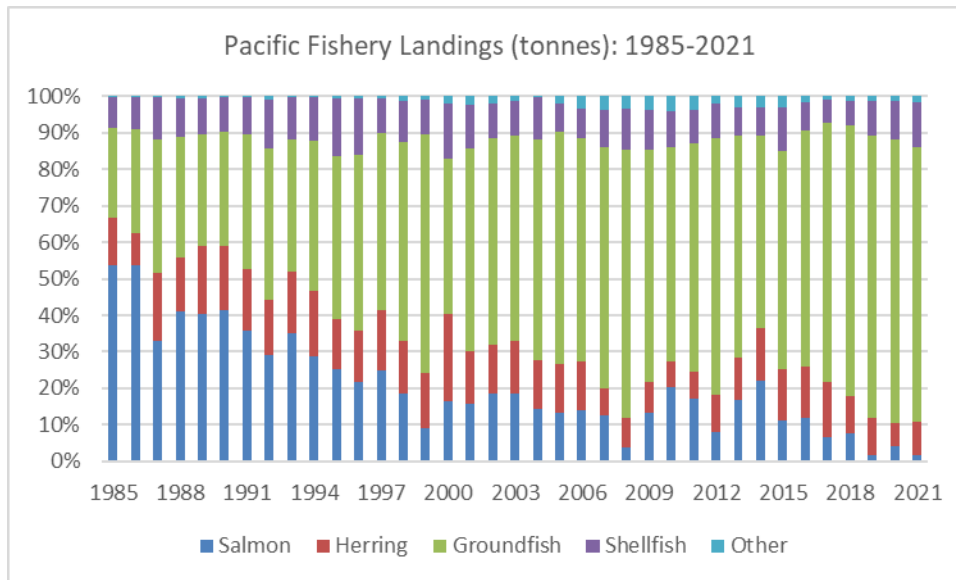


Figure 2: Pacific Fishery Landings (tonnes): 1985-2021

Over the decade from 1985 to 1994, annual harvests in BC’s salmon, herring, groundfish, and shellfish fisheries averaged 220,000 tonnes. By the most recent decade for which data are available — 2012 to 2021, that number had declined by one quarter, to 165,000 tonnes. Recent landings in BC’s commercial fishery are 75% of what they were three decades ago.

The relative landings of each of the four major fishery groups — salmon, herring, groundfish, and shellfish — are shown in Figure 3 below.

<sup>12</sup> We refer to the “four major fishery groups” — salmon, herring, groundfish, shellfish. The data and charts also show “Other” species, which from 1985 to 1995 was two-thirds tuna and from 1996 to 2021 was entirely tuna.



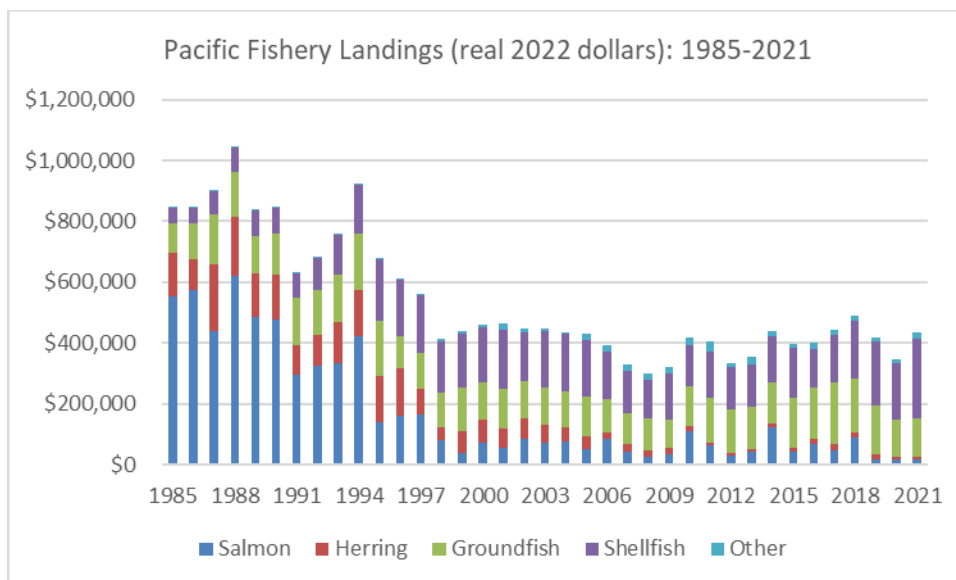
**Figure 3: Shares of Pacific Fishery Landings by Major Fishery Groups**

In 1985, salmon accounted for over one-half of total landings in BC. Salmon and herring (mostly roe herring) together accounted for two-thirds of total landings.

By 2021, three quarters of Pacific fishery commercial landings were groundfish. Together, commercial groundfish and shellfish fisheries accounted for 87% of total landings.

### Landed Value Trends

Figure 4 below shows the landed value of the annual harvest in BC fisheries measured in real (ie, inflation adjusted) 2022 dollars.



**Figure 4: Pacific Fishery Landed Value (real 2022 \$millions): 1985-2021**

The inflation-adjusted landed value of the BC harvest of salmon, herring, groundfish, and shellfish has declined by about one-half over the 37 year period shown, from a 1985-94 average of (2022) \$831 million to a 2012-2021 value of \$405 million.

Figure 5 shows the shares of landed values by fishery group.

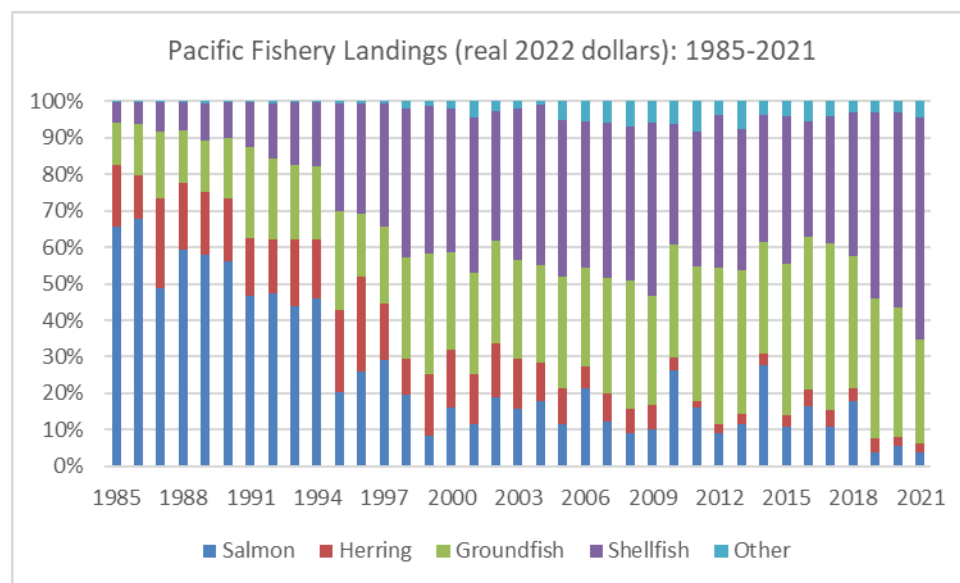


Figure 5: Shares of Pacific Fishery Landed Value by Major Fishery Groups

In 1985, salmon accounted for two-thirds of Pacific Region landed value; salmon and herring together accounted for over 80% of landed value. By 2021, these two fisheries together registered just over 6% of total landed value. The landed value of shellfish alone in 2021 represented over 60% of total landed value in BC.

### # Active Vessels

“Too many vessels chasing too-few fish” is (or was) a common adage in commercial fishery circles. It is a bad thing for the resource, for fishery managers (DFO) and for fishing fleets. For the support sector, however, that derives its revenues from the expenditures of commercial fishing vessels, more vessels fishing means more vessels needing work and more fishing supplies to sell.

Table 6 shows the steep decline in the numbers of active vessels in the salmon and halibut fisheries (two of the most populous fisheries) from 1991 to 2021. Note that 1991 was the first year the halibut fleet went to individual quota management and quotas were not transferable in the first two years of the program. Once halibut IQs became transferable, within a few years the number of active halibut vessels would have been significantly lower than shown in Table 6.

Table 6: Active Vessels in Salmon & Halibut Fisheries: 1991 & 2021

| #Active Vessels      | 1991         | 2021       | Difference     | %Change     |
|----------------------|--------------|------------|----------------|-------------|
| Salmon - Seine       | 527          | 33         | (494)          | -94%        |
| Salmon - Gillnet     | 1,639        | 182        | (1,457)        | -89%        |
| Salmon - Troll       | 1,335        | 164        | (1,171)        | -88%        |
| Salmon - GN/TR combo | 857          | 0          | (857)          | -100%       |
| <b>Salmon Total</b>  | <b>4,358</b> | <b>379</b> | <b>(3,979)</b> | <b>-91%</b> |
| <b>Halibut</b>       | <b>433</b>   | <b>148</b> | <b>(285)</b>   | <b>-66%</b> |

Source: Counterpoint. 1991 data from DFO (1992).

The point about 1991 not being a normal or representative year was raised by industry experts in their review of our draft report. Similar comments were made regarding our update of the Fleet Financials models to 2021, as it was an extraordinary year for the crab fishery (on the high side) and a Covid year



(on the low side). The point is that the commercial fishery inherently has a lot of variability, so making comparisons between one year and another could misrepresent the amount of change that is evidenced in the data. Our choice of 2021 for the Fleet Financials models was simply the most recent year for which data were available. Our choice of 1991 for the comparison of the number of active vessels was based on the availability of data [DFO (1992)] which was fine for salmon, being before the salmon resource and management changes of the 1990s but happened not to be a representative year for halibut. We address this issue in our recommendations.

### Annual Expenditures of the Commercial Salmon Fishery

Table 7 compares expenditures of the commercial salmon fleet (revenues of support sector businesses) and crew shares (contributing to the economies of coastal communities) in 2021 to the 1991 expenditures, adjusted for inflation.

**Table 7: Pacific Salmon Fishery Expenses: 1991 - 2021 (Real Values)**

| Pacific Salmon Fishery | 1991 Nominal         | 1991 Real            | 2021                | Difference (Real)      | 2021 as % of 1991 (Real) |
|------------------------|----------------------|----------------------|---------------------|------------------------|--------------------------|
| Fishery expenditures   | \$36,656,775         | \$66,938,459         | \$2,950,540         | (\$63,987,919)         | 4%                       |
| Vessel expenditures    | \$39,616,538         | \$72,343,242         | \$3,986,180         | (\$68,357,062)         | 6%                       |
| Groceries              | \$12,159,534         | \$22,204,367         | \$667,720           | (\$21,536,647)         | 3%                       |
| <b>Subtotal</b>        | <b>\$88,432,847</b>  | <b>\$161,486,068</b> | <b>\$7,604,440</b>  | <b>(\$153,881,628)</b> | <b>5%</b>                |
| Crew shares            | \$51,140,400         | \$93,386,817         | \$3,124,113         | (\$90,262,704)         | 3%                       |
| <b>Total</b>           | <b>\$139,573,247</b> | <b>\$254,872,886</b> | <b>\$10,728,553</b> | <b>(\$244,144,332)</b> | <b>4%</b>                |

Source: Counterpoint

The reduction in vessel spending, in real terms, is equivalent to \$154 million in the salmon fishery alone. Fishing and vessel expenditures plus groceries are 5% in real terms of what they were in 1991.

We have added a line item for crew earnings which, though not a direct vessel expenditure, is a sum that would typically circulate through coastal communities. Crew shares are down \$90 million since 1991 and 2021 crew shares were 3% of what they were in 1991.

The impact on support business and coastal communities from the diminution of the salmon fishery, including direct vessel expenditures and induced crew spending, is enormous.

### Other Key Fisheries

The reduction in active halibut vessels from 433 to 138 (Table 6, page 11) would have brought a significant decrease in fleet expenditures.

Further, it seems likely that:

- The roe herring fishery would have seen a large drop in vessel counts and expenditures.
- Other groundfish and shellfish fisheries are likely flat at best, as those fisheries have grown in value over the period, but often feature lower (or similar) vessel counts.

Overall, we are confident in asserting that the amount of revenue available to the support services sector remains a small fraction of what it was 30 years ago. This has obvious implications for the support sector and coastal communities.

### ***Licence Values: Landed Values (Ratio)***

Our study of the BC fishery leads us to conclude that, in broad terms, capital and operating expenditures on vessels have declined in emphasis over the last 30 years, with increasing allocations of funds to licence and quota expenditures.<sup>13</sup>

Table 8 below shows how the relationship between landed value of BC fisheries and the aggregate value of all licences and quotas has changed over the years. The 1991 values are not inflation-adjusted as this does not affect the value of the ratio.

**Table 8: Value of Commercial Fishing Access & Landed Value: 1991 & 2021**

| <b>Value/Ratio</b>                         | <b>1991</b>   | <b>2021</b>     |
|--|---------------|-----------------|
| Licence/quota aggregate value (includes F) | \$735,201,800 | \$2,600,000,000 |
| Landed value                               | \$367,325,000 | \$391,617,263   |
| <b>Ratio</b>                               | <b>2.0</b>    | <b>6.6</b>      |

*Source: Counterpoint*

The ratio of aggregate licence/quota value to landed value rose from 2.0 in 1991 to 6.6 in 2021. Commercial fishing access has become much more expensive relative to annual revenues (landed value). This reflects the increase in the profitability of the fishery over the past three decades, in part because of the many improvements to fisheries management that have reduced the common property problem.

In 1991 the key to fishing success was having a competitive boat and gear. Today, the key to fishing success is having an attractive suite of licences and quotas.<sup>14</sup>

In economic terms, fishers were dissipating the value of the fishery by competing to catch the available harvest, increasing their fishing and vessel costs along the way.<sup>15</sup> The rationalized fishery has allowed harvesters to minimize their costs of catching fishing, generating greater profits. But all of that has contributed to much lower spending by harvesters on supplies and services purchased from coastal community businesses.

### ***Migration of Seafood Processing to the Lower Mainland***

Another development influencing the amount and distribution of fishing and vessel expenditures is the location of seafood processing in the province.

In 1917, the number of coastal canneries peaked at 84. The fleet, and the services supporting it, were dotted virtually everywhere on the coast. Today, the cannery count is one, though of course other processing forms (fresh, frozen, value-added) have expanded in canning's stead.

Thirty years ago, Metro Vancouver and Prince Rupert had emerged as primary processing hubs, with feeder plants spread throughout the Central Coast and Vancouver Island. Today, processing is highly consolidated in Metro Vancouver. Much of this is to better meet market needs, which contributes to improved profitability of individual operations and further increases the value of the commercial fishery.

A contributing factor is that today's active fishing vessels have greater packing capacity and range, and better refrigeration than those in the past, and are not necessarily reliant on services being available

<sup>13</sup> This is not to deny concerns of commercial fishers regarding rising operating costs, including higher prices for supplies and services, higher variable costs, and "new" costs such as self-marketing of catch.

<sup>14</sup> Harvesting efficiency is still very important, of course: with harvest amount fixed by quota, profitability is directly related to harvesting efficiency (ie, lower costs per unit of harvest).

<sup>15</sup> This is not a one-way street. Over time, new costs have been introduced for harvesters, for example: catch reporting, monitoring, data management, and industry research.

near fishing grounds. Vessels often bring their catch “to town,” or offload in hubs that include Prince Rupert, Port Hardy, and Ucluelet, where the product is trucked to the Lower Mainland.

Table 9 below shows wages paid to seafood processing employees in 2020, broken out by region.

**Table 9: Seafood Processing Wages by Region: 2020<sup>16</sup>**

| Region                    | Wages Paid (\$millions) | % of Total  |
|---------------------------|-------------------------|-------------|
| Lower Mainland            | \$217.2                 | 75%         |
| North Coast/Prince Rupert | \$3.6                   | 1%          |
| Northern Vancouver Island | \$16.3                  | 6%          |
| Other                     | \$53.7                  | 18%         |
| <b>Total</b>              | <b>\$290.8</b>          | <b>100%</b> |

*Source: British Columbia (2022).*

As processing activity has gravitated to the Lower Mainland, so too have fishing fleets. With that, expenditures of commercial fishers have likewise moved to fewer, more populous, centres.

### Summary

The contextual information provided in this section yields some sobering trends for the commercial fishery support services sector and coastal communities:

- Higher-value fisheries support larger vessel expenditures. The salmon example provided shows an almost total collapse in harvest volumes and values for what has historically been BC’s pre-eminent fishery.
- The shift from open access/limited entry/fishing input controls to output controls/IQs has reduced the need to gear up and “over-invest” to avoid a breakdown before or during a competitive fishery.
- Support services rely on plentiful vessel counts but counts are down drastically over the last 30 years.
- A sharp rise in the ratio of licence/quota value to landed value suggests a substitution effect for expenditures from vessels to licences/quotas.
- Consolidation of seafood processing in the Lower Mainland has a likely corollary of drawing fishing vessel moorage and maintenance activity away from more remote sites to larger centres.

Thus, as is discussed in the Qualitative Findings section (see page 27), the support sector for the commercial fishing fleet has been subject to an ongoing, decades-long erosion of its customer base.

<sup>16</sup> In reviewing our draft report, industry experts thought the figure for North Coast/Prince Rupert seafood processing wages seemed low. DFO suggested perhaps the provincial survey excluded federally-licensed plants but processing plants licensed by the provincial and federal government are include in the British Columbia (2022) survey.

## Quantitative Findings: Support Sector Revenues

Next, we provide our estimates of the gross revenues of the supply sector derived from the fleet. All values are shown “to the dollar” but they are of course, estimates (lacking the precision implied by the number of significant digits, which is simply an outcome of our modelling methodology). Values should be considered to be of a reasonable order of magnitude.

### Revenues of Supply Sector Businesses 2021

Using our updated Fleet Financials model, we generated the schedule of supply sector revenues show in Table 10. Methodological details are described in Appendix A, page 36).

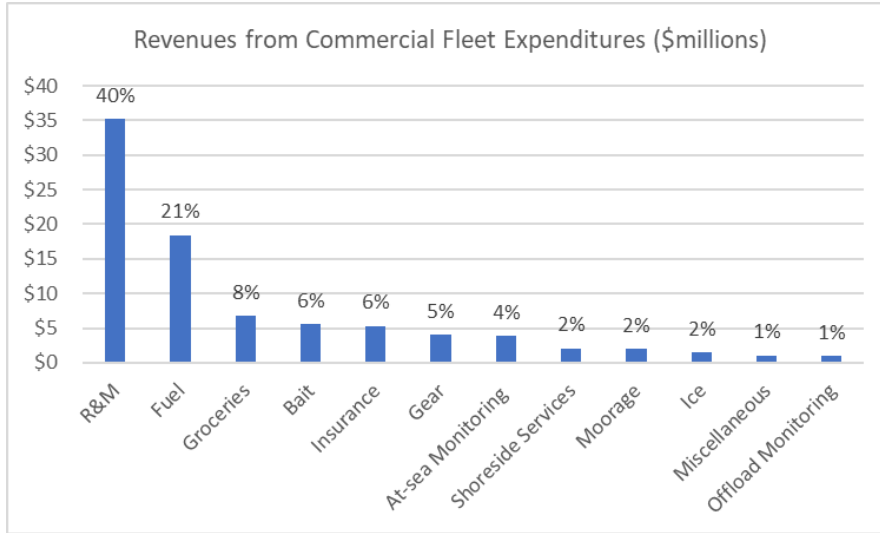
**Table 10: Supply Sector Revenues: 2021**

| Items                                     | Revenues            |
|---|---------------------|
| Fuel                                      | \$18,446,274        |
| Groceries                                 | \$6,801,301         |
| Bait                                      | \$5,635,844         |
| Gear                                      | \$4,014,548         |
| At-sea monitoring                         | \$3,900,027         |
| Ice                                       | \$1,498,436         |
| Offload monitoring                        | \$981,447           |
| <b>Revenues from Fishing Expenditures</b> | <b>\$41,277,878</b> |
| R&M Expenditures (including capital)      | \$35,160,869        |
| Insurance                                 | \$5,336,801         |
| Shoreside Services                        | \$2,094,846         |
| Moorage                                   | \$1,995,015         |
| Miscellaneous                             | \$1,076,105         |
| <b>Revenues from Vessel Expenditures</b>  | <b>\$45,663,637</b> |
| <b>Total Revenues</b>                     | <b>\$86,941,514</b> |

Source: Counterpoint

Commercial fishing industry experts who reviewed our draft report found our costs for fuel and monitoring to be low (compared to data they had collected in 2022). We reviewed the industry data and determined that, in total, industry cost estimates were about \$11 million higher than our estimates. Were we to adjust our Fleet Financials model, therefore, our estimate of total support sector revenues would be about \$98 million rather than the \$87 million shown in Table 10. This represents a difference of 12.6%. Both values are well within any reasonable range of uncertainty that surrounds such estimates, in our opinion. We have thus used our estimates for this analysis but we have provided DFO with a revised Fleet Financials Report that used the industry values for fuel and monitoring. We provide some recommendations regarding future analyses of the commercial fleet support sector and future estimates of Fleet Financials at the end of this report.

Supply sector revenues from commercial fishing fleet expenditures, by line-item, are shown in Figure 6.



**Figure 6: Supply Sector Revenues from Commercial Fleet Expenditures (\$millions)**

Supply sector businesses in 2021 earned gross revenues of \$86.9 million from the Pacific commercial fishing fleet. The largest component of those revenues by a significant margin was vessel R&M expenditures (40% of total revenues), followed by fuel (21%). The third largest component of supply sector revenues was groceries (8%).

### **Supply Sector Revenues by Fishery**

Table 11 shows supply sector business revenues generated from each of the fleets analyzed, sorted from highest spending to lowest, and the number of active vessels per fleet.

**Table 11: Supply Sector Revenues & #Active Vessels by Fishery**

| Fishery        | Revenues            | % of Revenues | #Active Vessels | % of Active Vessels |
|----------------|---------------------|---------------|-----------------|---------------------|
| T - Groundfish | \$13,903,750        | 16.0%         | 43              | 3.0%                |
| R - B-J        | \$10,974,900        | 12.6%         | 177             | 12.4%               |
| W              | \$9,368,750         | 10.8%         | 181             | 12.7%               |
| R - Area A     | \$8,294,640         | 9.5%          | 36              | 2.5%                |
| T - Hake       | \$7,444,050         | 8.6%          | 37              | 2.6%                |
| L              | \$7,014,830         | 8.1%          | 148             | 10.4%               |
| CT**           | \$4,917,670         | 5.7%          | 111             | 7.8%                |
| AT             | \$4,363,880         | 5.0%          | 164             | 11.5%               |
| K - Trap       | \$3,255,040         | 3.7%          | 12              | 0.8%                |
| Herring (all)  | \$2,900,869         | 3.3%          | 50              | 3.5%                |
| AS             | \$2,607,730         | 3.0%          | 33              | 2.3%                |
| AG             | \$2,473,210         | 2.8%          | 182             | 12.8%               |
| G              | \$2,028,650         | 2.3%          | 38              | 2.7%                |
| LC             | \$1,863,225         | 2.1%          | 66              | 4.6%                |
| K - Longline   | \$1,499,700         | 1.7%          | 23              | 1.6%                |
| ZD             | \$1,291,650         | 1.5%          | 30              | 2.1%                |
| ZC             | \$1,213,500         | 1.4%          | 34              | 2.4%                |
| ZNO            | \$949,200           | 1.1%          | 22              | 1.5%                |
| S              | \$391,500           | 0.5%          | 20              | 1.4%                |
| ZNI            | \$104,060           | 0.1%          | 8               | 0.6%                |
| ZA             | \$80,710            | 0.1%          | 11              | 0.8%                |
| <b>Totals</b>  | <b>\$86,941,514</b> | <b>100%</b>   | <b>1,426</b>    | <b>100%</b>         |

Source: Counterpoint

The eight fisheries generating the largest revenues for support businesses (above the line in Table 11) account for 76% of total expenditures. Those fisheries account for 897 active vessels, equivalent to 63% of the total number of active vessels.

We split some fisheries into components where we thought there were important distinctions worth recognizing:

- The trawl (T) fishery into bottom fish and hake.
- The crab fishery by area (Area A vs Areas B-J).
- The sablefish (K) fishery into trap and longline.
- The salmon fishery into gillnet, seine, and troll.

If these sub-fisheries are rolled back together, the importance of the groundfish trawl (T) and crab (R) fisheries are even more evident, as shown in Table 12. The top five fisheries generated 71% of all supply sector revenues.

**Table 12: Supply Sector Revenues by Fishery**

| Fishery          | Revenues            | % of Total Revenues |
|------------------|---------------------|---------------------|
| Groundfish trawl | \$21,347,800        | 24.6%               |
| Crab             | \$19,269,540        | 22.2%               |
| Prawn            | \$9,368,750         | 10.8%               |
| Halibut          | \$7,014,830         | 8.1%                |
| Sablefish        | \$4,754,740         | 5.5%                |
| <b>Total</b>     | <b>\$61,755,660</b> | <b>71.0%</b>        |

Source: Counterpoint

Four of the top five fisheries in Table 12 feature extended fishing seasons — trawl, crab, halibut, and sablefish. The fourth, prawn, has a two-month season but features, by today's standards, a relatively high vessel count.

In Table 13, we show per-vessel expenditures for each of the fishery categories in descending order by value.

**Table 13: Expenditures per Vessel by Fishery**

| <b>Fishery</b> | <b>Avg Expenditures per Vessel</b> |
|----------------|------------------------------------|
| T - Groundfish | \$323,343                          |
| K - Trap       | \$271,253                          |
| R - Area A     | \$230,407                          |
| T - Hake       | \$201,191                          |
| AS             | \$79,022                           |
| K - Longline   | \$65,204                           |
| R - B-J        | \$62,005                           |
| Herring (all)  | \$58,017                           |
| G              | \$53,386                           |
| W              | \$51,761                           |
| L              | \$47,398                           |
| CT             | \$44,303                           |
| ZNO            | \$43,145                           |
| ZD             | \$43,055                           |
| ZC             | \$35,691                           |
| LC             | \$28,231                           |
| AT             | \$26,609                           |
| S              | \$19,575                           |
| AG             | \$13,589                           |
| ZNI            | \$13,008                           |
| ZA             | \$7,337                            |

*Source: Counterpoint*

Table 13 reveals a theme: the larger the vessel and the longer it works throughout the fishing season, the higher the expense level. Unfortunately for coastal community businesses, bigger vessels are more likely to have their operations centred around larger urban centres, especially Metro Vancouver.

## **Supply Sector Revenues by Region**

### **In Aggregate & by Expenditure Type**

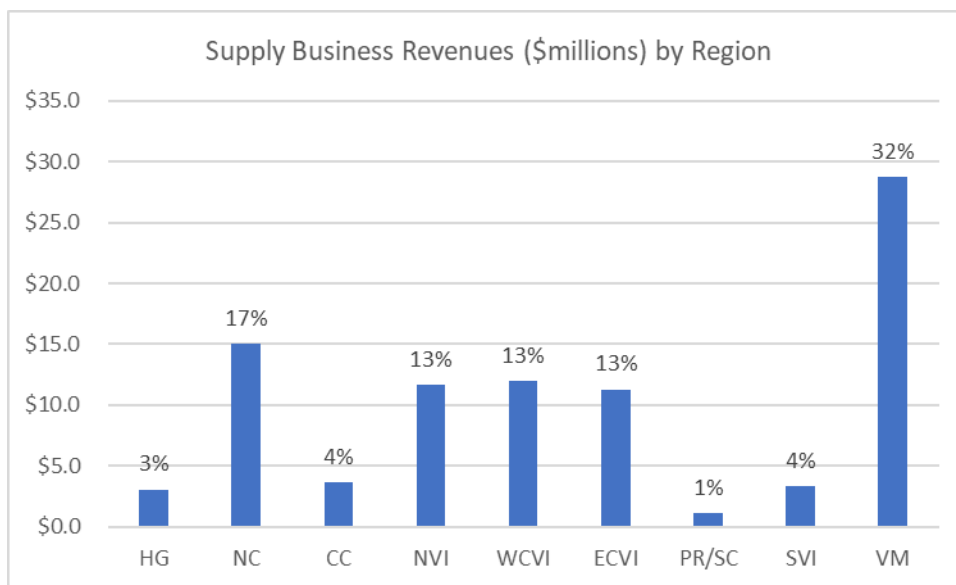
Table 14 shows total supply sector revenues in descending order by region. Vancouver Metro dominates the picture, but the North Coast and WCVI, NVI, and ECVI regions of Vancouver Island are significant providers of supplies and services to the commercial fishing fleet.

**Table 14: Supply Sector Revenues by Region**

| Region       | Revenues            | % of Total  |
|--------------|---------------------|-------------|
| VM           | \$28,021,824        | 32%         |
| NC           | \$14,130,860        | 16%         |
| WCVI         | \$11,515,093        | 13%         |
| NVI          | \$11,463,512        | 13%         |
| ECVI         | \$10,953,983        | 13%         |
| CC           | \$3,532,715         | 4%          |
| SVI          | \$3,258,579         | 4%          |
| HG           | \$2,960,652         | 3%          |
| PR/SC        | \$1,104,298         | 1%          |
| <b>Total</b> | <b>\$86,941,514</b> | <b>100%</b> |

Source: Counterpoint

The distribution of supply businesses’ revenues by fishing region is shown in Figure 7.



**Figure 7: Supply Business Revenues (\$millions) by Region**

VM has almost one-third of total revenues (32%) followed by NC (17%); together these two regions account for almost one-half of coastwide supply business revenues.

NVI, WCVI, and ECVI each have about one-eighth of coastwide revenues.

HG, CC, PR/SC, and SVI account for less than 5% of revenues each.

Table 15 provides the breakdown of fleet expenditures on supplies and services, by expenditure type and by region.



Table 15: Commercial Fishery Expenditures Accruing to Supply Sector Businesses by Region: 2021

| Expenditures                      | Coastwide           | HG                 | NC                  | CC                 | NVI                 | WCVI                | ECVI                | PR/SC              | SVI                | VM                  |
|-----------------------------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|
| <b>Fishing Expenditures</b>       |                     |                    |                     |                    |                     |                     |                     |                    |                    |                     |
| Fuel                              | \$18,446,274        | \$836,980          | \$3,714,776         | \$928,694          | \$2,870,407         | \$3,609,150         | \$1,764,046         | \$172,070          | \$482,711          | \$4,067,439         |
| Groceries                         | \$6,801,301         | \$380,080          | \$1,408,166         | \$352,042          | \$1,007,789         | \$1,252,118         | \$755,300           | \$75,097           | \$167,283          | \$1,403,425         |
| Gear                              | \$4,014,548         | \$185,035          | \$846,812           | \$211,703          | \$668,630           | \$695,695           | \$527,464           | \$53,398           | \$88,609           | \$737,203           |
| Bait                              | \$5,635,844         | \$322,225          | \$1,283,716         | \$320,929          | \$884,964           | \$767,290           | \$723,679           | \$73,096           | \$134,456          | \$1,125,488         |
| Ice                               | \$1,498,436         | \$58,855           | \$331,362           | \$82,841           | \$240,066           | \$273,539           | \$150,011           | \$14,724           | \$36,954           | \$310,085           |
| At-sea monitoring                 | \$3,900,027         | \$156,560          | \$731,816           | \$182,954          | \$650,998           | \$668,705           | \$419,549           | \$41,556           | \$110,645          | \$937,245           |
| Offload Monitoring                | \$981,447           | \$34,855           | \$161,402           | \$40,351           | \$159,147           | \$232,658           | \$76,664            | \$7,245            | \$28,386           | \$240,740           |
| <b>Total Fishing Expenditures</b> | <b>\$41,277,878</b> | <b>\$1,974,590</b> | <b>\$8,478,051</b>  | <b>\$2,119,513</b> | <b>\$6,482,001</b>  | <b>\$7,499,155</b>  | <b>\$4,416,714</b>  | <b>\$437,186</b>   | <b>\$1,049,044</b> | <b>\$8,821,625</b>  |
| <b>Vessel Expenditures</b>        |                     |                    |                     |                    |                     |                     |                     |                    |                    |                     |
| Moorage                           | \$1,995,015         | \$46,145           | \$235,518           | \$58,880           | \$247,592           | \$190,773           | \$338,134           | \$34,982           | \$87,295           | \$755,699           |
| Insurance                         | \$5,336,801         | \$129,512          | \$684,779           | \$171,195          | \$632,389           | \$468,883           | \$837,215           | \$86,099           | \$240,686          | \$2,086,044         |
| R&M Expenditures                  | \$35,160,869        | \$725,195          | \$4,286,624         | \$1,071,656        | \$3,755,172         | \$3,095,605         | \$4,908,053         | \$499,716          | \$1,734,677        | \$15,084,171        |
| Shoreside services                | \$2,094,846         | \$56,213           | \$292,290           | \$73,073           | \$228,252           | \$173,273           | \$298,104           | \$30,405           | \$97,469           | \$845,769           |
| Miscellaneous                     | \$1,076,105         | \$28,998           | \$153,598           | \$38,400           | \$118,106           | \$87,405            | \$155,764           | \$15,911           | \$49,408           | \$428,517           |
| <b>Total Vessel Expenditures</b>  | <b>\$45,663,637</b> | <b>\$986,062</b>   | <b>\$5,652,809</b>  | <b>\$1,413,202</b> | <b>\$4,981,510</b>  | <b>\$4,015,938</b>  | <b>\$6,537,269</b>  | <b>\$667,112</b>   | <b>\$2,209,535</b> | <b>\$19,200,198</b> |
| <b>Total Fleet Expenditures</b>   | <b>\$86,941,514</b> | <b>\$2,960,652</b> | <b>\$14,130,860</b> | <b>\$3,532,715</b> | <b>\$11,463,512</b> | <b>\$11,515,093</b> | <b>\$10,953,983</b> | <b>\$1,104,298</b> | <b>\$3,258,579</b> | <b>\$28,021,824</b> |
| <i>Region % of Coastwide</i>      | <i>100%</i>         | <i>3.4%</i>        | <i>16.3%</i>        | <i>4.1%</i>        | <i>13.2%</i>        | <i>13.2%</i>        | <i>12.6%</i>        | <i>1.3%</i>        | <i>3.7%</i>        | <i>32.2%</i>        |

Source: Counterpoint

These breakdowns provide bounds for discussions about the scope and significance of fishing fleet support expenditures in the regions.

For instance, there might be an exaggerated impression by some people of the current importance of fleet expenditures in, say, the Powell River/Sunshine Coast region: “It’s an important industry — the fleet spends tens of millions of dollars here every year.” Our analysis indicates total spending within this area to be little more than \$1 million in 2021.

Conversely, it might be thought that, in the Northern Vancouver Island region “commercial fishing fleet spending has been reduced to virtually nothing.” Our analysis yields an estimate of \$11.5 million of expenditures in the region, a not-insignificant amount.

### By Fleet Groupings

Figure 8 shows the regional distribution of revenues derived from the salmon fleet.

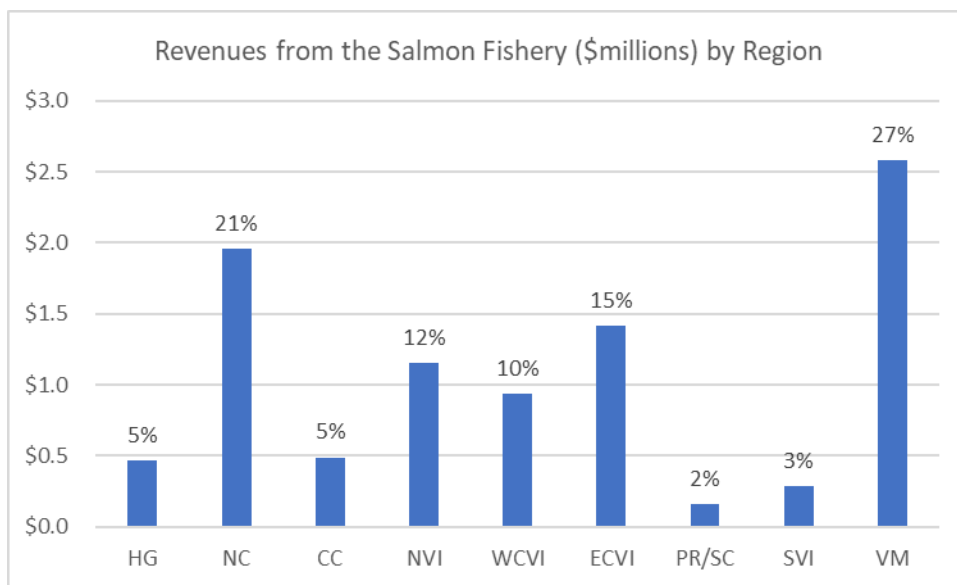


Figure 8: Revenues Accruing from the Salmon Fleet (\$millions) by Region

Salmon fleet revenues are concentrated in NC and VM regions (one-quarter of the coastwide salmon fleet total in VM and one-fifth in NC) with significant but smaller shares from the salmon fleet accruing in NVI, WCVI, and ECVI. Revenues from the salmon fleet are much smaller in the HG, CC, PR/SC, and SVI regions.

Supply business revenues from the groundfish hook & line/trap fishery are shown in Figure 9.

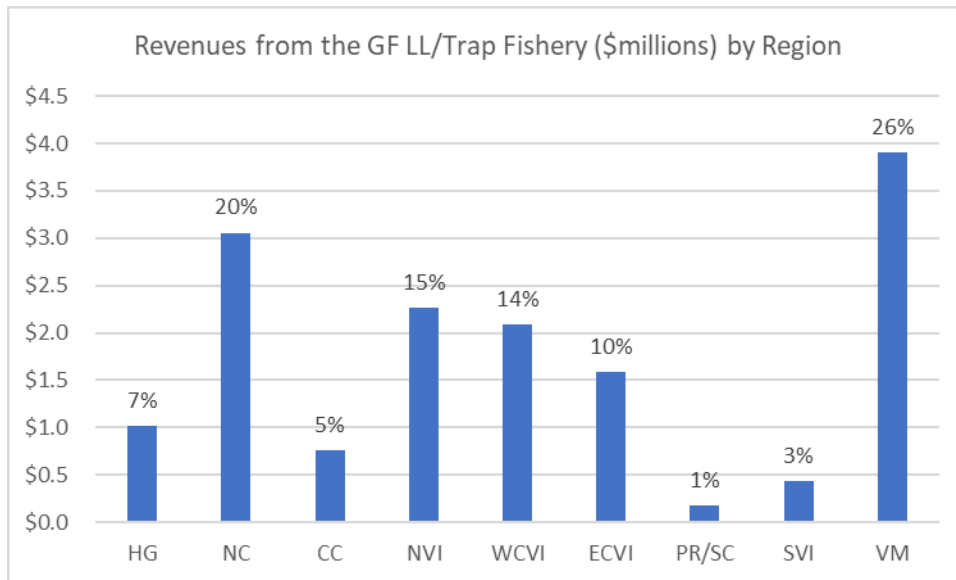


Figure 9: Revenues Accruing from the Groundfish Hook & Line/Trap Fleet (\$millions) by Region

The overall pattern is similar to that of the salmon fleet but with HG, CC, NVI, and WCVI getting larger shares of groundfish hook & line/trap fleet revenues than of salmon revenues. NC, ECVI, and VM play smaller roles in supplying the groundfish hook & line/trap fleet than the salmon fleet.

Supply business revenues derived from the groundfish trawl fleet are shown in Figure 10.

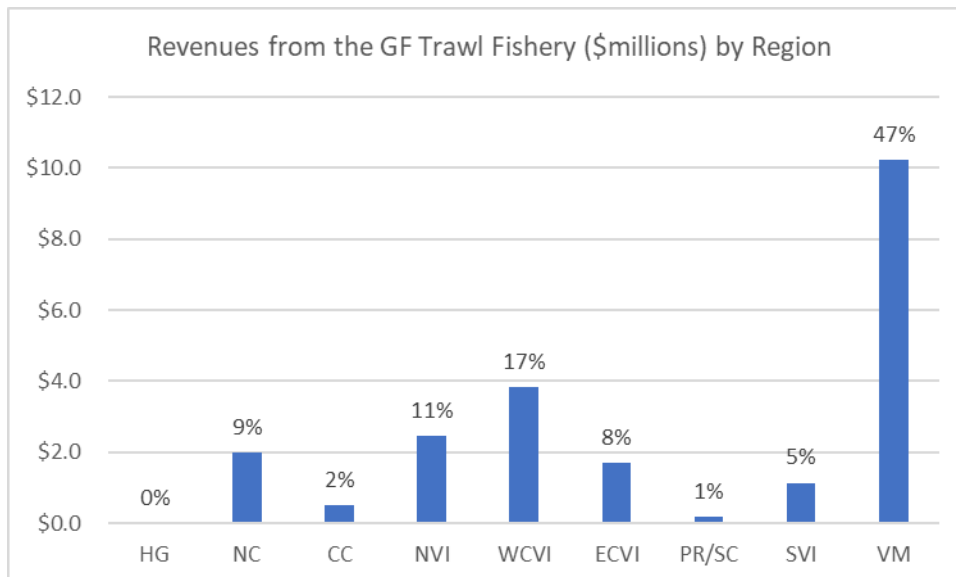


Figure 10: Revenues Accruing from the Groundfish Trawl Fleet (\$millions) by Region

Here the regional pattern is very different. VM accounts for almost one-half of supply business revenues from the groundfish trawl fleet. WCVI has the next largest share of groundfish trawl fleet revenues (17%) followed by NVI (11%).

Regional distributions of supply business revenues derived from shellfish fleets — Trap/Trawl and Dive groups — are shown in Figure 11 and Figure 12, respectively.

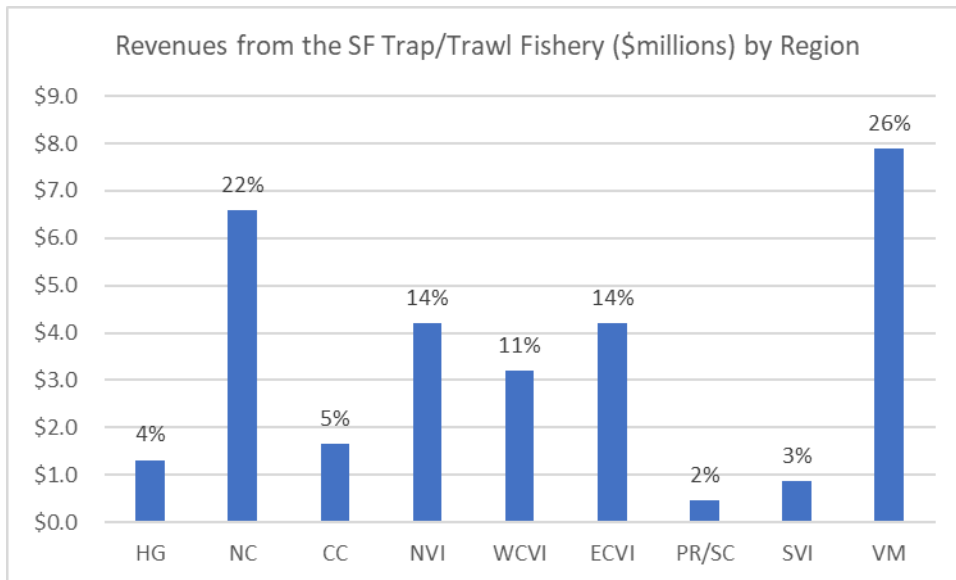


Figure 11: Revenues Accruing from the Shellfish Trap/Trawl Fleet (\$millions) by Region

The importance of shellfish fisheries for NC and VM region supply business revenues shows through in these charts.

NVI, WCVI, and ECVI shares are similar (to each other) ranging from 10% to 14% of coastwide revenues derived from shellfish fisheries.

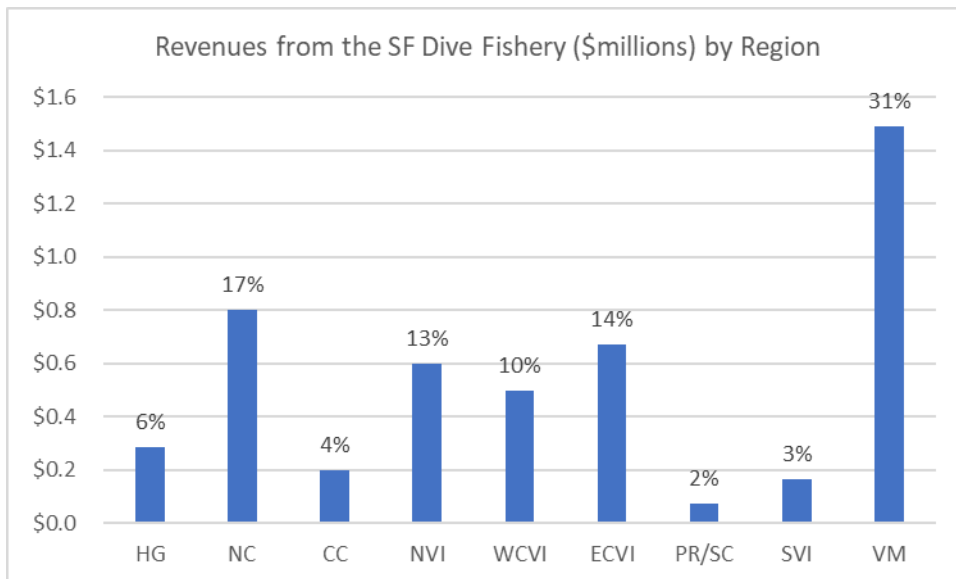
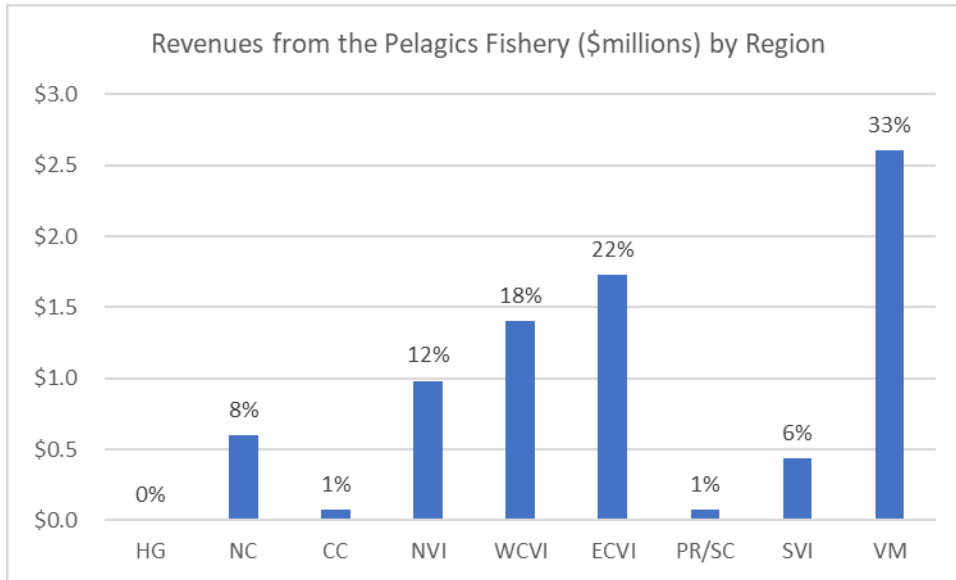


Figure 12: Revenues Accruing from the Shellfish Dive Fleet (\$millions) by Region

HG, CC, PR/SC, and SVI are less important when it comes to supply business revenues derived from shellfish fisheries but HG does have a larger share of revenues from the shellfish dive fishery (not so for the shellfish trap/trawl fishery).

Finally, the regional distribution of supply business revenues derived from the pelagic fisheries (including herring and tuna), shown in Figure 13, is unlike any of the other fishery groups.



**Figure 13: Revenues Accruing from the Pelagic Fisheries Fleet (\$millions) by Region**

One-third of supply business revenues derived from pelagic fisheries accrues in VM, followed by ECVI, WCVI, and NVI (22%, 18% and 12%, respectively). The NC region gets 8% of revenues from the pelagic fisheries fleet and SVI 6%. HG, CC, and PR/SC are negligible.

**By Individual Fleets**

Next, we offer a breakdown of supply sector revenues across regions derived from each fishing fleet, shown in Table 16 (next page). Reading across each fishery row in the table reveals how supply sector revenues are distributed across our fishing regions. Reading down each regional column indicates which fisheries contribute to total supply sector revenues within each region.

Table 17 simply aggregates the data shown in Table 16 into larger fishery groups (eg, salmon gillnet, seine, and troll into salmon).

**Table 16: Supply Sector Revenues by Fishery showing Regional Detail**

| Fishery        | Coastwide           | HG                 | NC                  | CC                 | NVI                 | WCVI                | ECVI                | PR/SC              | SVI                | VM                  |
|----------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|
| AG             | \$2,473,210         | \$85,561           | \$616,562           | \$154,141          | \$370,982           | \$161,761           | \$410,888           | \$45,654           | \$62,766           | \$564,897           |
| AS             | \$2,607,730         | \$0                | \$495,083           | \$123,771          | \$429,109           | \$37,949            | \$386,198           | \$42,911           | \$109,271          | \$983,439           |
| AT             | \$4,363,880         | \$380,122          | \$847,522           | \$211,880          | \$355,424           | \$735,546           | \$617,535           | \$68,615           | \$114,724          | \$1,032,512         |
| L              | \$7,014,830         | \$525,086          | \$1,539,156         | \$384,789          | \$1,050,171         | \$875,827           | \$791,941           | \$87,993           | \$175,987          | \$1,583,881         |
| K - Trap       | \$3,255,040         | \$149,904          | \$440,288           | \$110,072          | \$400,456           | \$387,608           | \$292,954           | \$32,550           | \$144,121          | \$1,297,087         |
| K - Longline   | \$1,499,700         | \$126,653          | \$345,300           | \$86,325           | \$253,305           | \$149,970           | \$130,444           | \$14,494           | \$39,321           | \$353,889           |
| ZNI            | \$104,060           | \$0                | \$0                 | \$0                | \$31,218            | \$24,908            | \$23,414            | \$2,602            | \$2,192            | \$19,727            |
| ZNO            | \$949,200           | \$67,740           | \$195,024           | \$48,756           | \$135,480           | \$115,200           | \$116,100           | \$12,900           | \$25,800           | \$232,200           |
| LC             | \$1,863,225         | \$93,161           | \$365,499           | \$91,375           | \$279,484           | \$422,843           | \$198,318           | \$22,035           | \$39,051           | \$351,459           |
| T - Groundfish | \$13,903,750        | \$0                | \$1,573,756         | \$393,439          | \$1,560,418         | \$2,373,973         | \$991,769           | \$110,197          | \$690,020          | \$6,210,180         |
| T - Hake       | \$7,444,050         | \$0                | \$297,762           | \$74,441           | \$744,405           | \$1,338,938         | \$669,965           | \$74,441           | \$424,410          | \$3,819,690         |
| W              | \$9,368,750         | \$255,185          | \$783,046           | \$195,762          | \$936,875           | \$936,875           | \$1,686,375         | \$187,375          | \$438,726          | \$3,948,532         |
| R - Area A     | \$8,294,640         | \$1,007,616        | \$3,745,421         | \$936,355          | \$829,464           | \$0                 | \$425,844           | \$47,316           | \$130,262          | \$1,172,362         |
| R - B-J        | \$10,974,900        | \$0                | \$1,755,984         | \$438,996          | \$2,194,980         | \$2,011,478         | \$1,810,330         | \$201,148          | \$256,199          | \$2,305,787         |
| S              | \$391,500           | \$0                | \$66,096            | \$16,524           | \$47,790            | \$67,365            | \$56,741            | \$6,305            | \$13,068           | \$117,612           |
| G              | \$2,028,650         | \$146,910          | \$318,996           | \$79,749           | \$251,835           | \$150,403           | \$182,579           | \$20,287           | \$87,789           | \$790,103           |
| ZA             | \$80,710            | \$0                | \$17,795            | \$4,449            | \$4,577             | \$9,597             | \$19,046            | \$2,116            | \$2,313            | \$20,818            |
| ZC             | \$1,213,500         | \$92,165           | \$221,196           | \$55,299           | \$123,655           | \$123,655           | \$242,622           | \$26,958           | \$32,795           | \$295,155           |
| ZD             | \$1,291,650         | \$30,550           | \$203,878           | \$50,970           | \$190,265           | \$190,265           | \$205,002           | \$22,778           | \$39,794           | \$358,148           |
| CT**           | \$4,917,670         | \$0                | \$302,497           | \$75,624           | \$983,534           | \$1,400,935         | \$680,618           | \$75,624           | \$139,884          | \$1,258,954         |
| Herring (all)  | \$2,900,869         | \$0                | \$0                 | \$0                | \$290,087           | \$0                 | \$1,015,304         | \$0                | \$290,087          | \$1,305,391         |
| <b>Total</b>   | <b>\$86,941,514</b> | <b>\$2,960,652</b> | <b>\$14,130,860</b> | <b>\$3,532,715</b> | <b>\$11,463,512</b> | <b>\$11,515,093</b> | <b>\$10,953,983</b> | <b>\$1,104,298</b> | <b>\$3,258,579</b> | <b>\$28,021,824</b> |

Source: Counterpoint

**Table 17: Supply Sector Revenues by Fishery Group showing Regional Detail**

| Fishery                     | Coastwide           | HG                 | NC                  | CC                 | NVI                 | WCVI                | ECVI                | PR/SC              | SVI                | VM                  |
|-----------------------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|
| Salmon                      | \$9,444,820         | \$465,683          | \$1,959,166         | \$489,792          | \$1,155,514         | \$935,256           | \$1,414,620         | \$157,180          | \$286,761          | \$2,580,849         |
| Groundfish Hook & Line/Trap | \$14,686,055        | \$962,543          | \$2,885,267         | \$721,317          | \$2,150,114         | \$1,976,356         | \$1,553,170         | \$172,574          | \$426,472          | \$3,838,244         |
| Groundfish Trawl            | \$21,347,800        | \$0                | \$1,871,518         | \$467,880          | \$2,304,823         | \$3,712,910         | \$1,661,733         | \$184,637          | \$1,114,430        | \$10,029,870        |
| Shellfish Trap & Trawl      | \$29,029,790        | \$1,262,801        | \$6,350,547         | \$1,587,637        | \$4,009,109         | \$3,015,718         | \$3,979,289         | \$442,143          | \$838,255          | \$7,544,292         |
| Shellfish Dive              | \$4,614,510         | \$269,625          | \$761,865           | \$190,466          | \$570,332           | \$473,919           | \$649,248           | \$72,139           | \$162,692          | \$1,464,224         |
| Pelagics                    | \$7,818,539         | \$0                | \$302,497           | \$75,624           | \$1,273,621         | \$1,400,935         | \$1,695,922         | \$75,624           | \$429,971          | \$2,564,345         |
| <b>Total</b>                | <b>\$86,941,514</b> | <b>\$2,960,652</b> | <b>\$14,130,860</b> | <b>\$3,532,715</b> | <b>\$11,463,512</b> | <b>\$11,515,093</b> | <b>\$10,953,983</b> | <b>\$1,104,298</b> | <b>\$3,258,579</b> | <b>\$28,021,824</b> |

Source: Counterpoint

Shares of fishing expenditures and vessel expenditures across our nine fishing regions are shown in Figure 14.

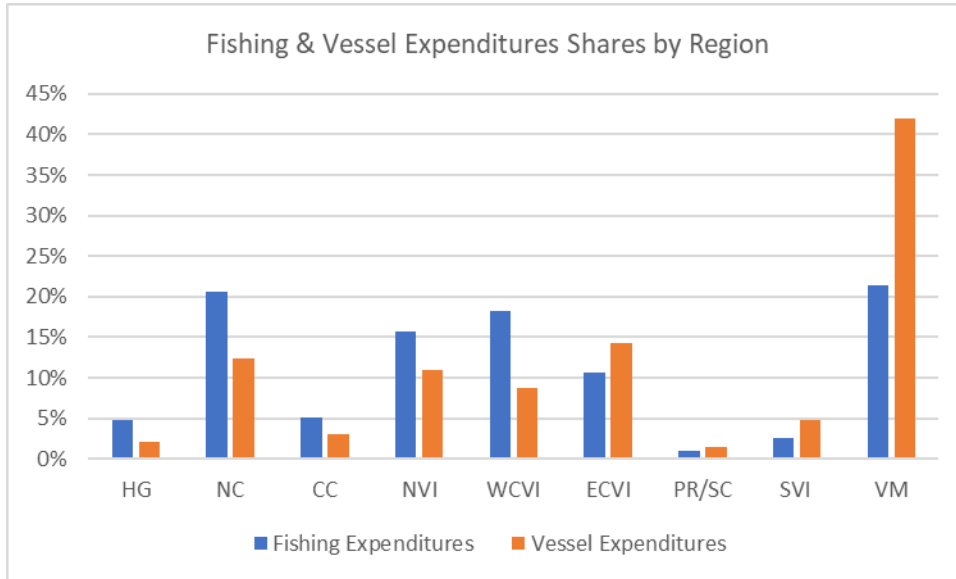


Figure 14: Fishing & Vessel Expenditures Shares by Region

Fishing expenditures tend to be larger than vessel expenditures in remote coastal regions near prime fishing grounds. Vessel expenditures, in contrast, tend to exceed fishing expenditures in more heavily populated regions.

Continuation of the pattern depends on continued availability of fishery-related supplies (such as fuel, ice, and groceries) in coastal locations.

## Qualitative Findings: Perspectives & Discussion

We have spent considerable time in this project analyzing the extent to which commercial fishing fleet expenditures have declined over the years and provided details on 2021 coastwide expenditures and breakdowns by region and by commercial fishing fleet.

In this section, we view the shrinking revenue pool generated by the commercial fleet from the perspective of those businesses providing supplies and services to the fleet and from the perspective of commercial fishers. While support businesses have felt the loss of revenues from a diminished fleet, commercial fishers in turn have felt significant changes in terms of the support sector businesses on which they rely.

This section is largely informed by our interviews with participants in both sectors. We spoke only to owners of support businesses that are still operating today. A large number of support businesses have exited the industry over the years, their absence being part of the story itself.

### *Support Services Perspectives*

#### **Business Types**

Sustaining a fishing operation in the commercial fishery requires a wide range of supplies and services. Types of businesses that provide supplies and services to the commercial fishing fleet include:

- Marine fuel stations.
- Fishery monitoring firms (a sector that scarcely existed 30 years ago).
- Bait suppliers (processing companies and cold storages).
- Ice suppliers.
- Net and fishing gear suppliers.
- Shipyards / boat ways (for repairs, refits, steamship inspections, haul-outs, painting, etc).
- Boat builders.
- Marine electronics suppliers.
- Marine hardware (assorted) suppliers.
- Engine suppliers (main engines, auxiliary engines, gensets).
- Refrigeration equipment suppliers.
- Mechanical, electrical, hydraulics, refrigeration parts and service.
- Metal fabricators.
- Fiberglass fabricators.
- Wood-workers.
- Commercial divers.
- Marine architects.
- Towing firms.

Businesses providing supplies and services range in size from substantial firms (eg, shipyards) to single tradespersons working from home or a small shop (eg, a welder).

Not every activity listed requires a vessel owner to purchase services from suppliers. Increasingly — and this tells part of the story of the diminished support sector as well — activities are handled by the fishers themselves.



### “Ideal” Business Profile

Below we list some of the conditions that supply sector businesses would find ideal. Essentially, this describes the state of the fishing industry 30+ years ago.

- Lots of commercial fishing vessels.
- Vessel owners who rely on third-parties for maintenance and repairs (rather than doing their own work).
- A high level of expenditure per vessel to keep the boat (and gear) competitive. This is most prevalent in competitive (derby) fisheries.
- Fisheries and fish processing dispersed throughout the coast.
- Vessels and gear that are heavily used, and therefore have a high rate of fuel consumption, gear loss, repair and maintenance, and ultimately, replacement.
- Ready payment for goods and services provided, such as Purchase Orders provided by major fishing companies. Collecting bills from fishers can be a challenge.
- DFO-mandated catch monitoring programs (this is positive for firms providing those services).

Unfortunately for support businesses, few of these conditions exist today. The type of fishery that provided those conditions is incompatible with today’s resource, market, and fishery management landscape. Many of today’s fisheries are the opposite of what is optimal for support businesses:

- Highly rationalized fleet.
- Increasingly, fishers are taking on their own repairs and maintenance in response to diminished inventories of parts and equipment, and longer wait times.
- High level of expenditure on licences and quotas and less emphasis on vessels and gear. Vessel/gear spending is tightly managed.
- Fewer derby fisheries, with less pressure to be competitive.
- Few major processing companies providing pre-season or in-season working capital to fishers.
- Processing centred in Metro Vancouver.

### Diversification of Supply Sector Customers to Other Marine Sectors/Industries

The supplies and services provided to commercial fishing vessels are in some cases very specific to fisheries (eg, fish-boat construction, catch monitoring, high-tonnage ice sales, bulk bait, nets, winches), but in other cases apply generally to vessels engaged in any marine activity (eg, fuel, grub, marine electronics, marine hardware).

The market for provision of supplies and services to the commercial fishing fleet has shrunk significantly over the past several decades. But other marine sectors have seen stability or growth. We cite marine sectors that we are reasonably confident have grown in BC since our 1991 baseline year:

- Aquaculture — particularly salmon farming, but also shellfish.
- Tourism activities such as whale-watching and sea lion tours.
- Surveys and environmental studies linked to oil & gas, LNG, mining developments.
- Marine spill / clean-up initiatives.

Has the growth in these sectors matched the decline in commercial fishing activity? We are not positioned to answer that question, as it requires delving into multiple other industries. Our take on the extent to which growth in non-fishing marine sectors has provided opportunities for firms in the commercial fishery support segment is as follows:

- A large number of commercial fishery support businesses were highly specialized in the commercial fishing sector. Many of these have had to shut down as aggregate commercial fleet expenditures plummeted. This would be particularly true in small or remote coastal communities.
- Some support businesses were simply not equipped or qualified to provide supplies and services to other (growing) marine sectors, even if they wished to.
- Some support businesses have replaced a portion of lost fishing business with business from other marine sectors but now operate at a smaller level.
- Some support businesses have pivoted away from the commercial fishery and now focus on other marine sectors.
- As non-fishing marine sectors grew, some businesses in these sectors intentionally opted not to utilize the services of commercial fishing industry providers. This was particularly true in the farmed salmon sector, where many supply inputs (eg, feed, gear) were brought by foreign owners and commercial fishery practices were considered incompatible with aquaculture.

### Specific Examples

Redden Nets, which opened in Campbell River in 1979, sold fishing tackle to the commercial fishing fleet. The company used to supply the fish camps that proliferated up and down the coast. Our interviewee cited the Mifflin Plan of 1996 and the “Coho Crisis” of 1998, and the ensuing licence buybacks and changes in the management of the salmon fishery, as “key turn dates” in the life and health of his business. The owners of Redden Nets eventually sold the business to their employees (so a large company was broken up into several smaller ones). One of the lower mainland stores now specializes in netting for sports (eg, golf courses and driving ranges). Our interviewee said he sells very little to the commercial fishing fleet anymore. He described his business as “fishing hardware store” meaning all kinds of fishing, but mostly angling not commercial fishing.

Redden Nets and two commercial fishers mentioned that salmon seiner owners had been buying used seine gear made redundant by the salmon licence buyback programs, in part to acquire webbing to maintain their purse seine nets or construct new ones. So, the salmon licence buyback programs created a kind of double whammy for commercial fishery support sector businesses, reducing vessels needing maintenance and supplies from the fleet and creating redundant gear and equipment to further displace sales of support sector businesses.

Some commercial fishery supply sector businesses have found opportunities and expanded their businesses in other ways. Ocean Pacific Marine Supply & Boatyard in Campbell River, for example, has grown significantly and invested in a large-vessel cradle haul out. They are now able to service much larger vessels and cover a larger area/customer base than formerly (ie, boats that would have had to go to Vancouver before Ocean Pacific’s expansion can now be serviced in Campbell River). They took up the slack from the many smaller yards that closed shop but they survived by servicing the tugboat fleet and other marine sectors (ie, diversification).

A couple of prominent commercial gear and equipment suppliers, EA Townes in Steveston and Stingray Fishing Supplies in Prince Rupert, have closed shop. Both of these firms felt the effects of the downturn in commercial salmon and herring fisheries incrementally over time, and eventually exited the business.

## *Fishing Fleet Perspectives*

Our interviewees reported countless closures of commercial fishery supply sector businesses. Inevitably, as the number of support sector businesses has declined, service levels have dipped. Some of the ways in which lower service levels have impacted the fleet are:

- Fewer fuel stations. Prince Rupert, for example, has only a single fuel station, meaning long line-ups during busy periods. The commercial fleet has no priority over recreational craft. Closure of many coastal fuel stations means vessels need to run further to fuel up. For some small vessel operators, especially in remote communities, this can shape fishing plans and result in higher fuel bills because of increased travel distances.
- Fewer tradespersons, even in the employ of boatyards. In some cases, fishers must bring in their own trades people to work on their vessels, even while the boat is in drydock.
- Gear suppliers tend to carry little or no inventory, so wait times are considerable. Fishers may need to use make-shift arrangements, or tie-up, until they get the gear they need.
- Fewer net lofts/gear storage facilities, meaning fishers either run longer distances to switch nets, or they make do with less satisfactory arrangements (eg, storing gear outdoors on their own property).
- Fewer buyer/processing outlets. Processors in the past provided a lot of services to the fleet — either directly, or through provision of working capital. Now, fishers largely make their own arrangements. Fewer plants and offloading stations mean the fleet may need to travel further to unload its catch.

Virtually all types of fleet support businesses have declined over the last thirty years, the sole exception being the growth of dockside and at-sea monitoring and validation firms.

Fishers reported that they noticed a marked decline in overall service levels — and an exodus of businesses — by the early 2000s, several years after major events in the salmon fishery, including the Mifflin Plan in 1996, the “Coho Crisis” of 1998, and several rounds of salmon licence retirements. While salmon fishery events were a major causal effect, the impact of roe herring switching from a derby fishery to pools (1998) has been significant, too. The move to individual quota management in groundfish fisheries was no doubt a major contributor to the sea change in the supply sector but being a lower profile fishery than salmon or (roe) herring, received less attention.

What is the adequacy of the current level of supply services for the fleet? The feedback we received from our interviewees is summarized below:

- For some small operators in remote areas, significant adjustments to fishing plans need to be made due to a paucity of services.
- For the bulk of fishers, the new reality is that individuals need to be prepared, plan ahead, carry some inventory of parts, supplies, and even fuel, and hope to avoid breakdowns. Breakdowns today can result in far more lost fishing time than in the past. More so than in the past, fishers may need to wait to get the supplies and services they need. The skillsets required to be a successful fisher have expanded over the years.
- Overall, fishers can generally still cope — the business of catching fish continues — but they worry that continued declines in service levels will materially compromise their ability to conduct business.

The state of the support services sector is not the only challenge facing the fleet. Rising fuel costs and challenges in recruiting and retaining qualified crew members are also impediments to operations.

## Conclusions

In this report we:

- Identify the linkages that influence the commercial fleet supply sector.
- Quantify, based on a modeling methodology, the revenues derived by the supply sector from various segments of the commercial fleet, broken down into coastal regions.
- Provide qualitative perspectives from both the commercial harvester and supply sector sides.

We trust that the information provided will improve DFO's understanding of the current size and distribution of the supply sector around the coast, including an appreciation of the extent to which individual fisheries and fishery groups contribute to supply sector revenues.

The inescapable conclusion drawn, even from looking merely at background/context data, is that the supply sector has seen a contraction roughly in proportion to that seen in the commercial fishing fleet, which is to say, dramatic. We estimate that the supply sector today (2021) has shrunk by over \$150 million in the salmon fishery alone compared to 1991. The job loss accompanying such diminution of activity, while not estimated, is substantial.

While we have provided a more in-depth understanding of the linkages between commercial fishing operations and support businesses, lack of data prevented us from extending the linkages to individual coastal communities.

The commercial fishing industry in BC is very concerned about the status and sustainability of its supply sector. More work on harvesting–supply sector linkages is needed to better understand the state of the supply sector and how best to address its sustainability and ability to provide timely and reasonably priced supplies and services to the commercial fleet.

The current state of the supply sector is the result of decades of fishery management changes focused on solving the common property problem, rationalizing the fleet, reducing pressure on the resource, and improving the economics of the fishery. Those myriad and diverse initiatives have resulted in far fewer (active) vessels in the commercial fleet and much improved economics reflected in higher margins, which in turn imply lower expenditures for a given harvest value.

The next step, in our view, is to extend this initial assessment of harvesting–supply sector linkages by filling data gaps, and then to devise and implement whatever policies, programs, and initiatives are needed to ensure that the supply sector can function efficiently and effectively to support commercial fishers.

We address the data and analysis issues in our recommendations.

## Recommendations

Our recommendations are structured under the three goals of this project stated in the RFP:

- Supply sector: Factors affecting support businesses viability
- Commercial fleet: Operational considerations as they relate to support businesses
- Coastal communities: Reliance on support businesses

We offer some general recommendations outside of these headings to conclude this section.

### ***Supply sector: Factors affecting support business viability***

A survey of supply sector businesses focused on support business viability should be undertaken before the next attempt to assess linkages between the harvesting and supply sectors. Focus groups of industry participants and supply sector business owners should be used to define the issues addressed in the survey. The survey should include the supply business community to begin to better understand the linkages between supply businesses and coastal communities.

Industry concerns about the sustainability of its supply sector should be addressed. The survey of supply sector businesses above could include questions aimed at better understanding this issue. Focus groups would be most helpful here in designing topics and questions for the survey on this issue.

Thought might be given to how the viability of the supply sector could be assessed.

### ***Commercial fleet: Operational considerations as they relate to support businesses***

Consideration should be given to identifying or collecting data that could be used to calibrate the distributions of fishing and vessel expenditures across fishing regions. We recommend that Statistics Canada's Supply Use Tables be considered for this purpose. Such data might be collected in a survey of commercial fishers but it is not difficult to imagine that such detail might well result in very low response rates to such surveys. Other sources of data on this issue should be investigated.

The fleet should be surveyed to gain a better understanding of operational considerations as they relate to supply businesses. We heard from fishers regarding:

- Lack of supply business inventory requiring fishers to order what they needed and to wait for delivery, sometimes months
- Increased self-reliance on obtaining parts and doing or organizing repair work (such as hiring trades to come to a shipyard to do work)
- Sourcing parts on the internet and ordering for elsewhere in Canada and the United States
- Concerns over breakdowns when away from home port and especially during a fishery.

A survey could flesh out these issues and explore how they might be addressed.

### **Fleet financials**

As Fleet Financials models are at the core of any analysis of harvest sector / supply sector linkages, we highlight our recommendations with respect to Fleet Financials in this subsection.

Unless a formal Fleet Financials Report has been produced not more than, say, two years before the next harvesting–supply sectors linkages analysis is launched, one should be conducted specifically for that purpose.

DFO is beginning to focus on fishing operations rather than individually-licensed fleets (ie, on a fleet of vessels that hold commercial fishing access for, say, halibut, rockfish, and salmon troll, rather than on

three separate fleets each of which is defined by holding licences for one of those fisheries). Depending on how well developed this idea is and how committed DFO is to pursuing it, this approach could be considered for the Fleet Financials Report prepared for the next harvesting–supply sectors linkages analysis.

Based on comments on our draft report from industry experts, consideration should be given to including new cost categories in future Fleet Financials Reports. Cost categories suggested by the industry experts reviewing this analysis included:

- Transportation
- Technology
- Data management services

Perhaps the latter two could be combined into one defined to include hardware and data management.

We did not model the Fleet Financials for herring fisheries because the data collected by DFO would not support it. Consideration should be given to if, and if so, how, this could be redressed.

In the next harvesting–supply sectors linkages study, Fleet Financials prepared for that analysis should be circulated to industry before the linkages analysis begins. That would ensure consensus on Fleet Financials before committing to the analytical work of assessing harvesting–supply sectors linkages.

### ***Coastal Communities: Reliance on support businesses***

During the course of this project, DFO mentioned that it is considering a survey of coastal communities using Chambers of Commerce as a conduit. Regardless of how it is undertaken, DFO should undertake a survey of coastal communities focused on issues relevant to this analysis. Again, focus groups would be very helpful for identifying issues that should be addressed in such a survey and prioritizing them.

The focus of this project as described in the RFP was “linkages between commercial fishing operations, support businesses, and coastal communities.” To be clear, there really are two sets of linkages there:

- Linkages between commercial fishing operations and supply businesses
- Linkages between supply businesses and coastal communities

Thus, the survey of supply businesses (recommended above) and the survey of coastal communities recommended here should focus on (or at least include) those linkages.

Moving from harvesting–supply sectors linkages to supply sector–coastal community linkages seems likely to bring a requirement for greater detail. There are many different types of supply businesses (see Business Types, page 27), not all of which are readily identifiable as commercial fishing fleet supply businesses (eg, marine fuel stations; refrigeration equipment suppliers; mechanical, electrical, hydraulics, refrigeration parts and services). There are undoubtedly many complex, related, and interwoven linkages between supply businesses and coastal communities. It won't be easy to design and undertake such a survey but it would be very helpful in furthering the goals of subsequent studies following up on this one.

DFO should also assess the feasibility of collecting data on spending of crew shares in coastal communities (ie, induced economic impacts) and determine whether this is better done in a survey of Fleet Financials (perhaps specifically of crew members rather than vessel owners) or a survey of coastal communities.

The objectives here should be to collect the data necessary to support the creation of coastal community profiles akin to the regional profiles described in this report and to better understand the reliance of coastal communities on the commercial fishing fleet's supply sector.

It should be possible to identify coastal communities within each region that are "commercial fishery communities" (somehow defined). Those should be listed in future studies and linked to DFO data on FRCs by community.

DFO should try to get community-level data on working-age populations.

### **General**

Industry experts reviewing our draft report pointed out that 2021 was a Covid year and an unusually productive year for crab fisheries, making it perhaps unrepresentative of the commercial fishery. Similarly, regarding our comparison of the number of active vessels in 2021 vs 1991, they noted that the latter was the first year in which the halibut fishery was managed under individual quotas and that only a few years later, the number of active vessels would have been much lower.

It is certainly not unusual in analyses of Pacific fisheries for studies and comparisons to be based on a span of years rather than a single year. The longstanding tradition of using four-year periods to assess salmon fisheries is well-established and well-known although much less relevant now given its diminished importance in the commercial fishery.

In this study, the reasons for criticizing the use of single years are:

1. Covid started in 2020, significantly affecting the fishery.
2. Harvests in the crab fishery more than doubled starting in 2019.
3. Halibut IQs had just been introduced in 1991.

DFO should consider how to address the issue of using single years in studies of harvesting-supply sectors linkages and supply sector-coastal community linkages. Using spans of years might be one approach. Carefully considering which single years to use might be another, although arguably fisheries are so subject to dynamics from multiple sources that no single year could be deemed to be representative of the fishery in the longer (or perhaps medium) term.

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## Appendix A: Fleet Financials Profiles (2021)

### *Supply Business Revenues from the Commercial Fishery*

The expenditures of commercial fishing fleets, to purchase supplies and services used in fishing and to build and maintain their fishing vessels, constitute the revenues of the commercial fishing supply sector businesses.

We drew on the expenses portion of the Fleet Financials models' income statements. Expenses are grouped into two categories: fishing expenses and vessel expenses.

Fishing expenses depend in large part on a vessel's fishing activity. In economic parlance, fishing expenses are variable costs because they vary with the amount of fish production. Fishing expense categories from the Fleet Financials models are shown in Table 18.

**Table 18: Fishing Expenses (Variable Costs)**

| <b>Fishing Expenses</b>      |
|------------------------------|
| Licence / co-management Fees |
| Licence/quota lease          |
| Gear                         |
| Fuel                         |
| Ice                          |
| Bait                         |
| At-sea monitoring            |
| Offload monitoring           |

*Source: Nelson (2011) updated*

Licence / co-management fees (first line item in Table 18) are paid to DFO annually to renew commercial fishing privileges authorized by a valid commercial fishing licence. Those fishing costs do not form part of the revenues of commercial fleet supply sector businesses and are therefore not further considered in this report.

The portion of the fleet in each fishery that is active — that is out doing the fishing — leases commercial fishing access that is not being used by the inactive portion of the fleet. This is the second line item in Table 18. Lease payments accrue as revenues to the inactive portion of the fleet. Commercial fishing access leasing costs do not directly affect commercial fleet supply sector businesses and therefore are also not further considered in this report.

An important commercial fishing expenditure that does not appear in Table 18 nor in our vessel income statement models is “grub.” Groceries taken on board to feed the Captain and crew are paid for out of crew shares and so are not listed in the Fleet Financials models as fishing or vessel expenses. But they are revenues to businesses that can be considered part of the supply sector to the commercial fleet, and so have been added to the 2021 Fleet Financials models.

With these adjustments, Table 19 shows the line items that constitute commercial fleet supply sector revenues from fishing expenditures.

**Table 19: Revenues from Fishing Expenditures**

| <b>Revenues from Fishing Expenses</b> |
|---------------------------------------|
| Fuel                                  |
| Groceries                             |
| Gear                                  |
| Bait                                  |
| Ice                                   |
| At-sea monitoring                     |
| Offload monitoring                    |

*Source: Counterpoint*

Vessel expenses are largely independent of a vessel's fishing activity. Vessel expenses are called fixed costs because they do not vary with the amount of output (landings). Vessel expenses from the Fleet Financials models are shown in Table 20.

**Table 20: Vessel Expenses (Fixed Costs)**

| <b>Vessel Expenses</b> |
|------------------------|
| Moorage                |
| Insurance              |
| Repairs & maintenance  |
| Shoreside services     |
| Miscellaneous          |

*Source: Nelson (2011) updated*

Repairs & maintenance (R&M) include a variety of functions, including haul-out, dry-dock, painting, welding, woodwork, mechanical, electrical, electronics, hydraulics, and others. R&M includes both labour and materials.

Shoreside services include bookkeeping, settlements (the process of paying crew members regularly, which requires estimating the gross stocks on which crew shares are based), accounting services, and legal services.

As with fishing expenses and groceries, there is an important line item missing from vessel expenses that needs to be included because it generates revenue for commercial fleet supply businesses. Income statements like the Fleet Financials models are intended in part to calculate taxable income and therefore include only costs that can be "expensed" in the current year. Capital costs cannot be expensed but rather result in a depreciation expense that can be thought of a  $1/N^{\text{th}}$  of the capital cost incurred in a given year, where N is the life of the capital items in number of years. Although a vessel owner only gets to expense the deprecation amount each year, the full capital cost in that year ends up as revenue to commercial fleet supply businesses. We have estimated repair & maintenance capital costs and included them in R&M in the supply business revenues from commercial fleet vessel expenditures. This is shown in Table 21 where R&M Expenditures includes R&M expenses plus R&M capital costs.

**Table 21: Revenues from Vessel Expenditures**

| <b>Revenues from Vessel Expenses</b> |
|--------------------------------------|
| R&M (including capital)              |
| Insurance                            |
| Shoreside services                   |
| Moorage                              |
| Miscellaneous                        |

*Source: Counterpoint*

## Appendix B: Regional Profiles

In this appendix, we profile the fishing regions used in this analysis, including:

- Population
- FRCs
- SCHs
- Provincially-licensed fish processing plants
- Federally-licensed fish processing plants
- Regional supply business revenues by fishery

DFO provided the following data on regional populations and number of FRCs held by residents of each fishing region.

**Table 22: Populations and # of FRCs by Fishing Region**

| Fishing Region              | Population       | FRCs         | FRC as % of Pop |
|-----------------------------|------------------|--------------|-----------------|
| Haida Gwaii                 | 5,000            | 58           | 1.2%            |
| North Coast                 | 42,000           | 576          | 1.4%            |
| Central Coast               | 3,700            | 78           | 2.1%            |
| Northern Vancouver Island   | 63,000           | 670          | 1.1%            |
| East Coast Vancouver Island | 344,000          | 1,080        | 0.3%            |
| West Coast Vancouver Island | 35,000           | 246          | 0.7%            |
| Southern Vancouver Island   | 440,000          | 348          | 0.1%            |
| Powell River/Sunshine Coast | 55,000           | 320          | 0.6%            |
| Vancouver Metro             | 3,189,000        | 1,835        | 0.1%            |
| <b>Totals</b>               | <b>4,176,700</b> | <b>5,211</b> | <b>0.1%</b>     |

Source: British Columbia (2003)

In the tables in this appendix showing commercial fishing harbours in each region, “Capacity” is the length of floats at the harbour available for moorage, measured in metres. The physical length of floats is doubled (tripled) where double (triple) rafting is possible and permitted. Physical float length is reduced to account for space between vessels and spots where mooring is not possible, such as mooring piles, ladders, and corners where finger floats meet header floats.

“High Use” is the typical length of floats used during the harbour busy season (whenever that might be). High Use less than Harbour Capacity indicates that a harbour is underutilized.

### Haida Gwaii

The Haida Gwaii fishing region is part of the North Coast Regional District consisting of the islands and communities that constitute Haida Gwaii.

Haida Gwaii fishing region is home to three SCHs, at Masset, Port Clements, and Daajing Giids, as shown in Table 23

**Table 23: Commercial Fishing Harbours in the HG Region**

| Name                     | Capacity | High Use |
|--------------------------|----------|----------|
| Daajing Giids            | 1,719    | 843      |
| Masset (Delkatla Slough) | 1,432    | 551      |
| Port Clements            | 274      | 163      |

Source: DFO (2023)

There are five provincially-licensed fish processing plants in Haida Gwaii and three federally-licensed ones.

Of the provincially-licensed plants, four are sport fishing lodges and one is a marine plants processor. The three federally-licensed plants include Haida Wild LP, one receiver, and one custom processor for sport-caught fish.

Figure 15 shows the distribution of supply business revenues in HG region by fishery group. Total supply business revenues in HG in 2021 were \$3.6 million.

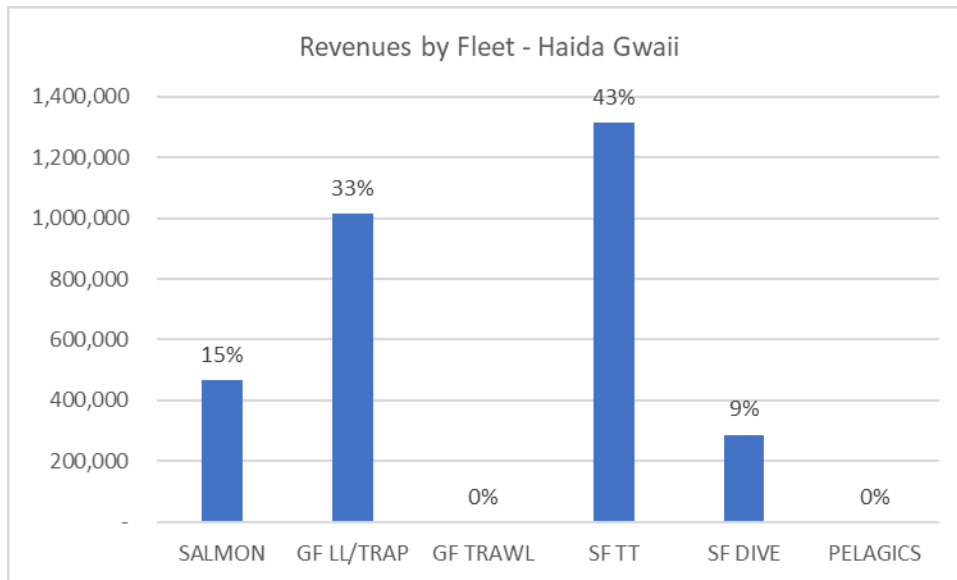


Figure 15: Supply Business Revenues - Haida Gwaii Region

### North Coast

The North Coast fishing region comprises parts of the North Coast and Kitimat-Stikine Regional Districts. There are fifteen harbours in the NC region, as shown in Table 24, four in Prince Rupert and one in nearby Port Edward, and one at Lax Kw'alaams.

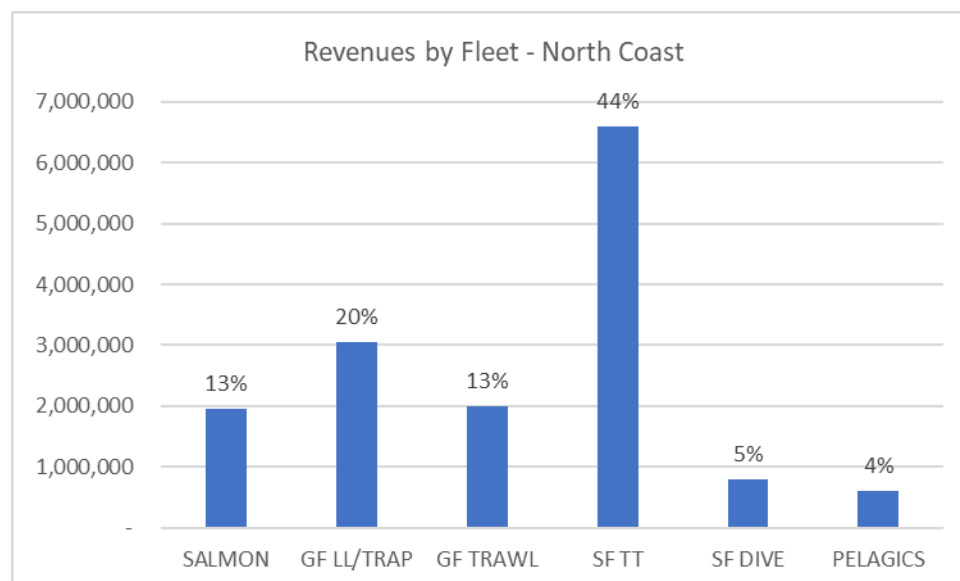
**Table 24: Commercial Fishing Harbours in the NC Region**

| Name                         | Capacity | High Use |
|------------------------------|----------|----------|
| Prince Rupert (Fairview Bay) | 2,855    | 1,414    |
| Port Edward                  | 2,784    | 1,620    |
| Prince Rupert (Rushbrook)    | 2,671    | 1,717    |
| Lax Kw'alaams                | 1,280    | 330      |
| Prince Rupert (Dodge Cove)   | 659      | 263      |
| Hartley Bay                  | 635      | 80       |
| Stewart                      | 548      | 200      |
| Kitamaat Village             | 524      | 185      |
| Kitkatla                     | 393      | 85       |
| Oona River                   | 385      | 165      |
| Wiah Point                   | 380      | 87       |
| Prince Rupert (Cow Bay)      | 250      | 272      |
| Mitchell Bay                 | 215      | 82       |
| Klemtu                       | 198      | 78       |
| Hunts Inlet (Porcher Island) | 97       | n/a      |

Source: DFO (2023)

There are 10 provincially-licensed plants in the North Coast fishing region and 11 federally-licensed plants, with two plants overlapping (ie, holding both provincial and federal licences). Some focus on marine plants or sport-caught fish, others on shellfish and fin fish. The Coast Tsimshian Fish Plant (CTFP) is the largest fish processing plant left on the north coast. Aero Trading, with a plant in Vancouver, has an offloading and primary processing facility in Prince Rupert.

Commercial fishing fleet supply business revenues in 2021 totaled \$15.0 million in the NC region. The derivation of those revenues by commercial fishery group is shown in Figure 16.



**Figure 16: Supply Business Revenues - North Coast Region**

The major contributor to supply business revenues in the NC region in 2021 was the shellfish trap/rawl fisheries (44%). Shellfish fisheries contributed one-half of NC supply business revenues and the groundfish fisheries accounted for one-third of total NC region supply business revenues.

### Central Coast

Our Central Coast fishing region is identical to the provincial Central Coast Regional District.

There are three SCHs in the CC region, as shown in Table 25.

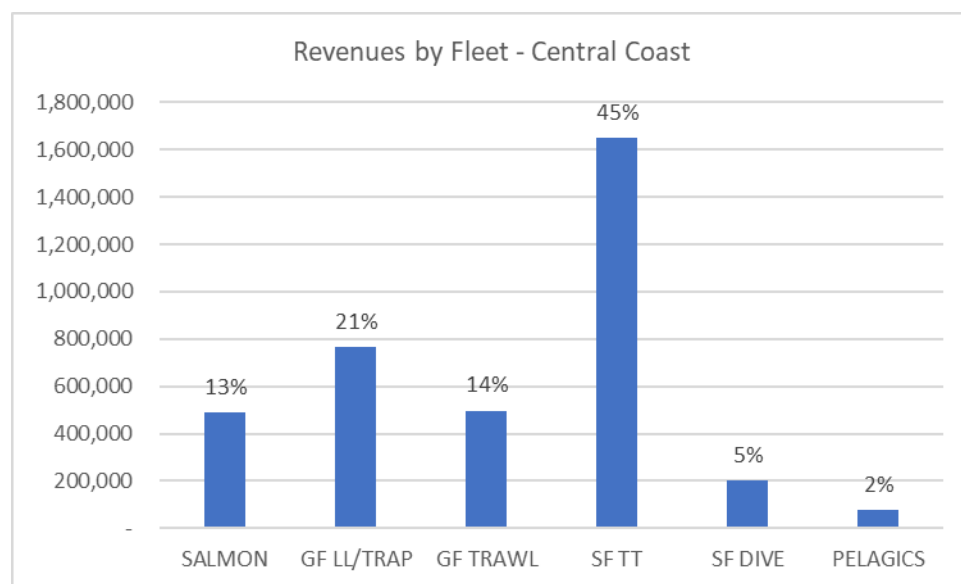
**Table 25: Commercial Fishing Harbours in the CC Region**

| Name                       | Capacity | High Use |
|----------------------------|----------|----------|
| Bella Coola                | 2,398    | 1,990    |
| Bella Bella (Martins Cove) | 905      | 316      |
| Ocean Falls                | 823      | 198      |

Source: DFO (2023)

There are six provincially-licensed plants, four for sport-caught fish and two for commercial processing. The two federally-licensed plants are in Bella Bella and Klemtu. The plant in Klemtu that used to process farmed salmon now does valued added processing (smoking and packaging portions) of fish processed in Port Hardy.<sup>17</sup>

Commercial fleet supply business revenues in the CC region totaled \$3.7 million in 2021. Figure 17 shows the CC region supply business revenue shares by fishery group.



**Figure 17: Supply Business Revenues - Central Coast Region**

Shellfish dive fisheries accounted for 45% of supply business revenues in the CC region. Over one-third (35%) of supply business revenues were derived from groundfish fisheries. Salmon fisheries accounted for 13% of CC region supply business revenues.

### Northern Vancouver Island

Northern Vancouver Island (NVI) fishing region comprises the Mt Waddington and Strathcona Regional Districts. This puts Campbell River and environs in our NVI region. In regional analyses of BC fisheries, Campbell River is usually included in the ECVI region.

There are twenty commercial fishery harbours in the NVI region, as shown in Table 26, a very large one in Campbell River (one of the largest in the province), and large ones in Port Hardy, Sointula, Alert Bay,

<sup>17</sup> Larry Greba, pers comm, March 31, 2023.

Port McNeill, Squirrel Cove and Mansons Landing (Cortes Island), and Heriot Bay and Quathiaski Cove (Quadra Island).

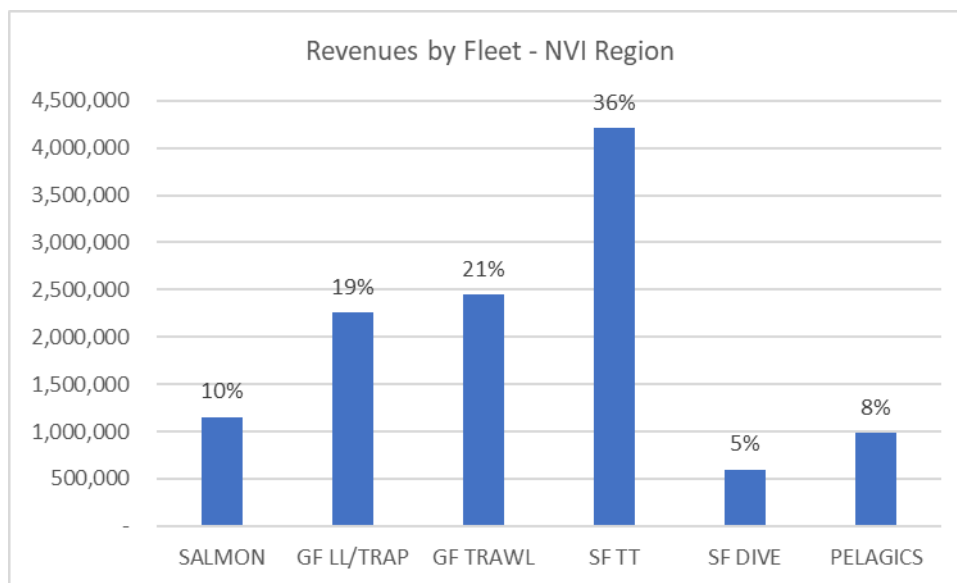
**Table 26: Commercial Fishing Harbours in the NVI region**

| Name                               | Capacity | High Use |
|------------------------------------|----------|----------|
| Campbell River                     | 4,228    | 6,906    |
| Sointula                           | 3,709    | 1,374    |
| Port Hardy                         | 3,242    | 1,610    |
| Alert Bay                          | 1,893    | 991      |
| Campbell River (Discovery Harbour) | 1,664    | 949      |
| Port McNeill                       | 1,228    | 690      |
| Quathiaski Cove                    | 865      | 486      |
| Zeballos                           | 734      | 252      |
| Heriot Bay                         | 589      | 511      |
| Kelsey Bay                         | 533      | 432      |
| Minstrel Island - Wharf And Floats | 376      | 75       |
| Winter Harbour - Wharf And Floats  | 345      | 303      |
| Squirrel Cove                      | 326      | 666      |
| Cortes Bay                         | 320      | 260      |
| Mansons Landing                    | 278      | 538      |
| Shoal Bay (East Thurlow Island)    | 263      | 141      |
| Gilford Island                     | 232      | 22       |
| Cape Mudge                         | 195      | 100      |
| Bull Harbour (Hope Island)         | 90       | 12       |
| Gorge Harbour                      | 82       | 126      |

Source: DFO (2023)

There are 16 provincially-licensed plants in NVI, 8 for sport-caught fish, 6 commercial processors, and one processing marine plants.

Commercial fleet supply businesses in the NVI region earned \$11.7 million in 2021. As shown in Figure 18, over one-third of that total was derived from the shellfish trap & trawl fisheries (36%).



**Figure 18: Supply Business Revenues - NVI Region**

The groundfish and shellfish fisheries each contributed about 40% of commercial fishery supply business revenues.

### ***West Coast of Vancouver Island***

The WCVI fishing region as defined for this study is identical to the Alberni-Clayoquot Regional District.

There are twelve SCHs in the WCVI region, as shown in Table 27.

**Table 27: Commercial Fishing Harbours in the WCVI Region**

| <b>Name</b>                  | <b>Capacity</b> | <b>High Use</b> |
|------------------------------|-----------------|-----------------|
| Port Alberni-Fishing Harbour | 3,860           | 7,804           |
| Ucluelet West                | 2,901           | 3,664           |
| Tofino (4th Street) - Floats | 1,584           | 1,308           |
| Marktosis (Ahousat Village)  | 824             | 703             |
| Bamfield West                | 623             | 264             |
| Ucluelet (Otter Street)      | 576             | 235             |
| Tofino (Armitage Point)      | 462             | 369             |
| Itatsoo (Ucluelet)           | 354             | n/a             |
| Opitsat                      | 298             | 250             |
| Ucluelet East                | 181             | 44              |
| Tofino (Wingen Lane)         | 171             | 40              |
| Ahousat                      | 96              | 9               |

*Source: DFO (2023)*

The largest harbours are in Port Alberni, Ucluelet, and Tofino, with a significant harbour at Ahousat Village. Port Alberni counts one (very large) harbour, Ucluelet has four harbours and Tofino has three, so eight of the twelve harbours in the WCVI are in those three communities.

There are 28 licensed processing plants in the WCVI region, 14 provincially-licensed and 14 federally-licensed. Of the provincially-licensed plants, 2 process marine plants, 11 process commercially-caught fish (of which 1 is one of the marine plants processors), and 2 process sport-caught fish. Of the 14 federally-licensed plants, 8 are commercial fishing vessels, there are at least three processors (of which one is restricted to farmed salmon), and there is one company with a receiving station and one that does valued-added production.

Figure 19, below, shows commercial fleet supply business revenues of \$12 million and their distribution across fishery groups.



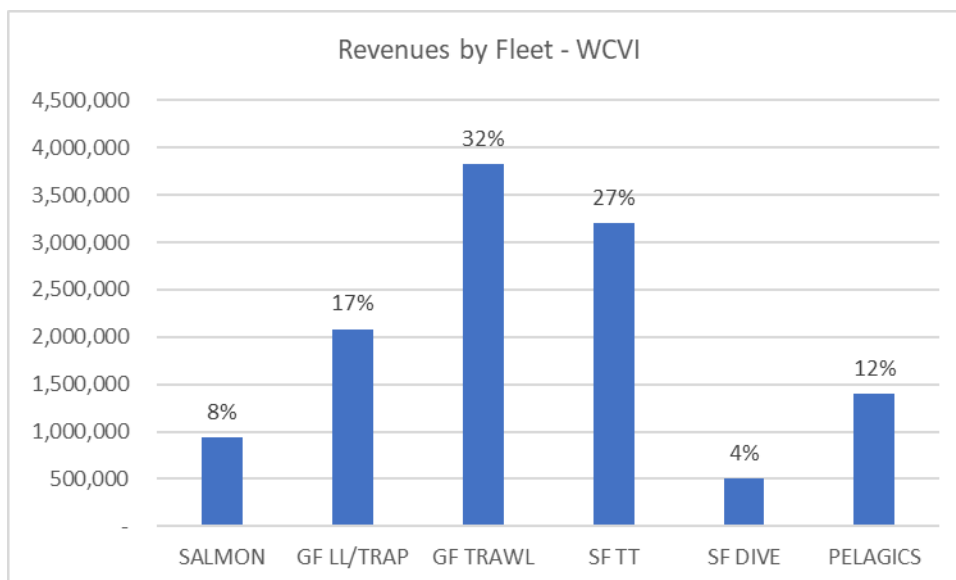


Figure 19: Supply Business Revenues - WCVI Region

The dominant fishery groups in the WCVI region contributing to commercial fleet supply business revenues are groundfish and shellfish trap & trawl.

### East Coast of Vancouver Island

The East Coast of Vancouver Island (ECVI) fishing region comprises the provincial Regional Districts of Comox Valley, Nanaimo, and Cowichan Valley. It is a separate fishing region from the mainland side of the Strait of Georgia which we call the Powell River/Sunshine Coast (PR/SC) fishing region.

There are ten SCHs in the ECVI fishing region, spread along the coast from Courtenay and Comox in the north of the region to Cowichan Bay in the south. ECVI commercial fishing harbours are shown in Table 28.

Table 28: Commercial Fishing Harbours in the ECVI Region

| Name             | Capacity | High Use |
|------------------|----------|----------|
| French Creek     | 3,469    | 1,859    |
| Comox            | 2,959    | 2,483    |
| Cowichan Bay     | 1,855    | 914      |
| Ladysmith        | 1,267    | 725      |
| Deep Bay         | 1,209    | 1,059    |
| Ford Cove        | 819      | 1,060    |
| Crofton          | 589      | 416      |
| Courtenay-Slough | 419      | 232      |
| Degnen Bay       | 308      | 201      |
| Fanny Bay        | 257      | 228      |

Source: DFO (2023)

There are 57 federally-licensed plants and 3 provincially-licensed plants in the ECVI fishing region. One plant in the region is licensed both federally and provincially. One of the provincially-licensed plants specializes in marine plants. Of the 57 federally-licensed plants, 40 are commercial fishing vessels, 12 specialize in shellfish, and 4 are finfish processors, one with multiple sites and several integrated with retail operations.

Figure 20 shows commercial fleet supply business revenues in the ECVI region, which total \$11.3 million.

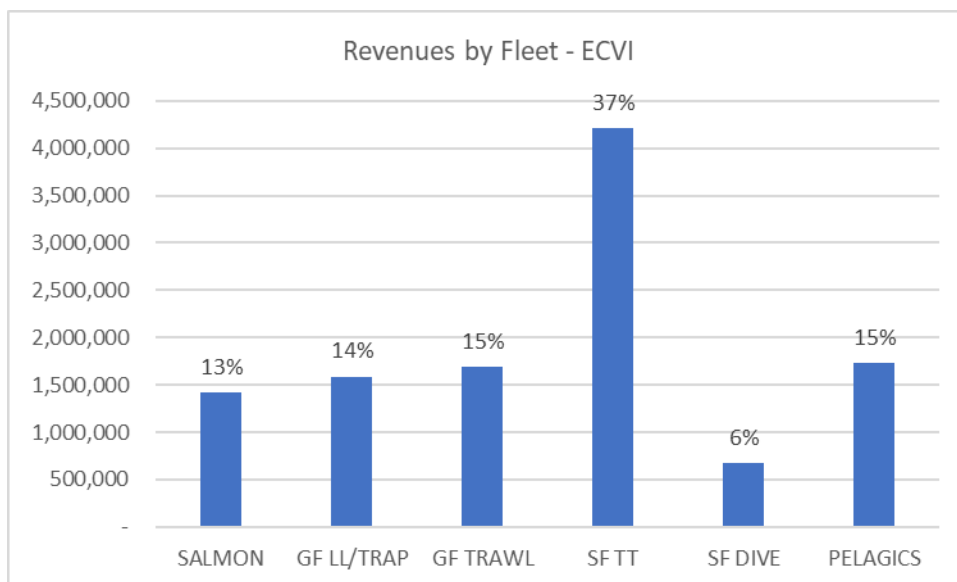


Figure 20: Supply Business Revenues - ECVI Region

Here too, the shellfish trap & trawl fishery dominates but four other fishery groups make significant contributions to supply business revenues in the ECVI region.

### Powell River/Sunshine Coast

Powell River/Sunshine Coast (PR/SC) fishing region is an amalgam of the qathet and Sunshine Coast Regional Districts.

There are thirteen SCHs in the PR/SC region, strung along the coast as in the ECVI region, from Lund in the north to Gibsons in the south. They are listed in Table 29.

Table 29: Commercial Fishing Harbours in the PR/SC Region

| Name                            | Capacity | High Use |
|---------------------------------|----------|----------|
| Gibsons                         | 1,588    | 1,000    |
| Powell River South              | 1,379    | 2,041    |
| Lund                            | 1,151    | 1,189    |
| Madeira Park                    | 782      | 450      |
| Saltery Bay                     | 767      | 234      |
| Hospital Bay                    | 727      | 310      |
| Egmont                          | 566      | 339      |
| Whiskey Slough (Pender Harbour) | 507      | 271      |
| Porpoise Bay                    | 500      | 212      |
| Okeover Inlet                   | 211      | 343      |
| Finn Bay                        | 196      | 107      |
| Squitty Bay                     | 171      | 218      |
| Secret Cove                     | 169      | 120      |

Source: DFO (2023)

There are two provincially-licensed plants in the PR/SC region, one a shellfish harvester/processor/-retailer and the other a seafood restaurant. Of the 17 federally-licensed plants in the region, 13 are licensed harvesters, and two specialize in processing farmed fish.

Figure 21 shows commercial fleet supply business revenues in the PR/SC region, which totaled a little over \$1.1 million.

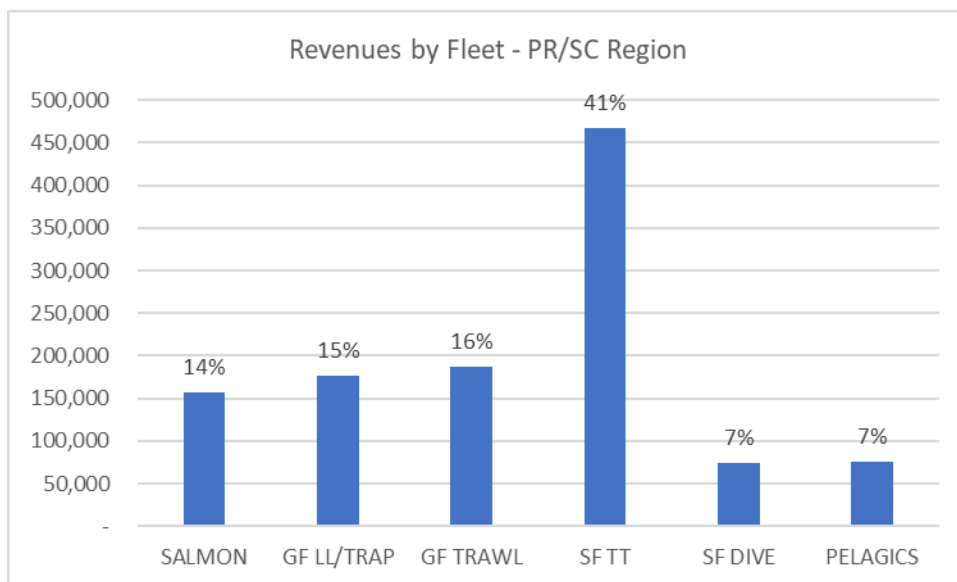


Figure 21: Supply Business Revenues - PR/SC Region

As with landed values, the dominant fishery group for PR/SC supply business revenues is shellfish trap & trawl.

### Southern Vancouver Island

Southern Vancouver Island (SVI) fishing region comprises the Capital Regional District.

There are twelve SCHs in the SVI region, as shown in Table 30.

Table 30: Commercial Fishing Harbours in the SVI Region

| Name                           | Capacity | High Use |
|--------------------------------|----------|----------|
| Tsehum Harbour (Shoal Harbour) | 1,676    | 2,395    |
| Ganges (Inner Harbour)         | 1,428    | 692      |
| Ganges (Outer Harbour)         | 1,361    | 558      |
| Sooke                          | 884      | 403      |
| Whaler Bay                     | 710      | 525      |
| Lyll Harbour (Saturna Island)  | 284      | 58       |
| Horton Bay                     | 236      | 51       |
| Musgrave (Saltspring Is.)      | 131      | 58       |
| Fulford Harbour                | 126      | 107      |
| North Galiano                  | 54       | 19       |
| Vesuvius Bay                   | 49       | 19       |
| Burgoyne Bay                   | 42       | 12       |

Source: DFO (2023)

There are 14 provincially-licensed plants and 11 federally-licensed plants in the SVI region with one plant holding both federal and provincial registrations. Most of the provincially-licensed plants focus on commercial harvest with one processing sport-caught fish and two processing marine plants. Of the 11 federally-licensed plants, 8 are commercial fishing vessels with processing licences, one (with two licences) is an oyster farmer, and one is an integrated harvester/retail outfit.

Commercial fleet supply business revenues in the SVI region amounted to \$3.34 million. Figure 22 shows the origin of those revenues from the various fishery groups.

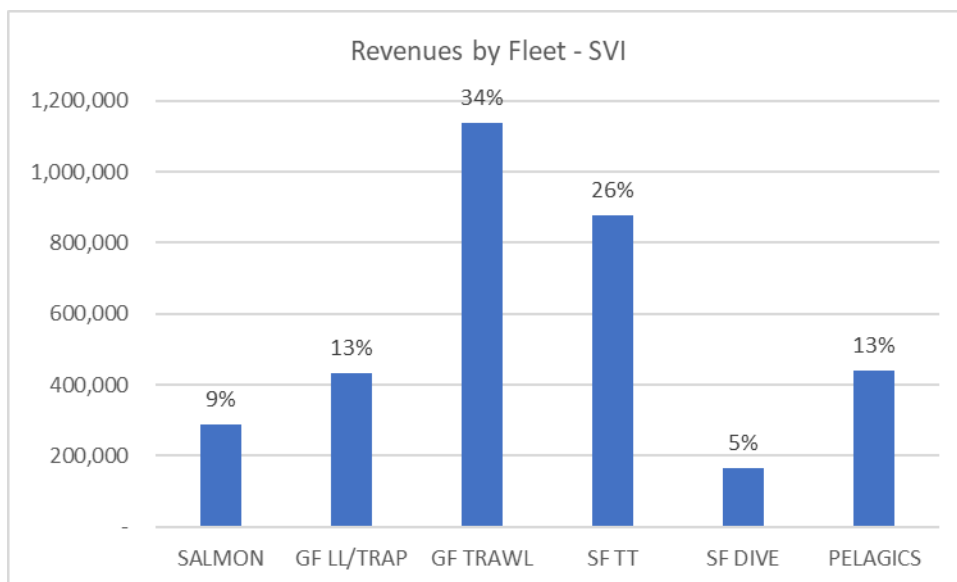


Figure 22: Supply Business Revenues - SVI Region

### Vancouver Metro

The Vancouver Metro (VM) fishing region comprises the Metro Vancouver Regional District and the Fraser Valley Regional District.

There are eleven SCHs in this region, as shown in Table 31. The four largest are the key commercial fishing ports in the lower mainland: False Creek, Steveston (Paramount and Gulf of Georgia), and Ladner. Smaller ones are strung along the Fraser River from Ladner to Mission.

Table 31: Commercial Fishing Harbours in the VM Region

| Name                        | Capacity | High Use |
|-----------------------------|----------|----------|
| Vancouver (False Creek)     | 6,537    | 2,800    |
| Steveston (Paramount)       | 6,523    | 4,294    |
| Steveston (Gulf Of Georgia) | 4,217    | 2,511    |
| Ladner (Delta)              | 4,179    | 845      |
| Mission                     | 1,184    | 464      |
| Squamish                    | 1,047    | 451      |
| Kanaka(Haney)-Landing       | 535      | 225      |
| McIvor’s Landing (Langley)  | 269      | 133      |
| McMillan Island             | 201      | 29       |
| Whonnock                    | 112      | 73       |
| Albion                      | 96       | 141      |

Source: DFO (2023)

The VM fishing region is home to 46 provincially-licensed plants and 141 federally-licensed plants, with four companies holding dual licences. Of the 46 provincially-licensed plants, 14 are cold storage facilities, and the rest but one process commercially-caught wild harvest. There is one company listed as processing sport-caught fish.

There are at least ten major processors among the federally-licensed plants in the VM region, as well as three dozen licensed commercial fishing vessels, a plethora of small specialty processors (many targeting markets in Asia), several cold storage companies, and a handful of companies producing medicinals.

Commercial fleet supply business revenues in the VM fishing region came to \$28.7 million in 2021. The distribution of those revenues from our fishery groups is shown in Figure 23

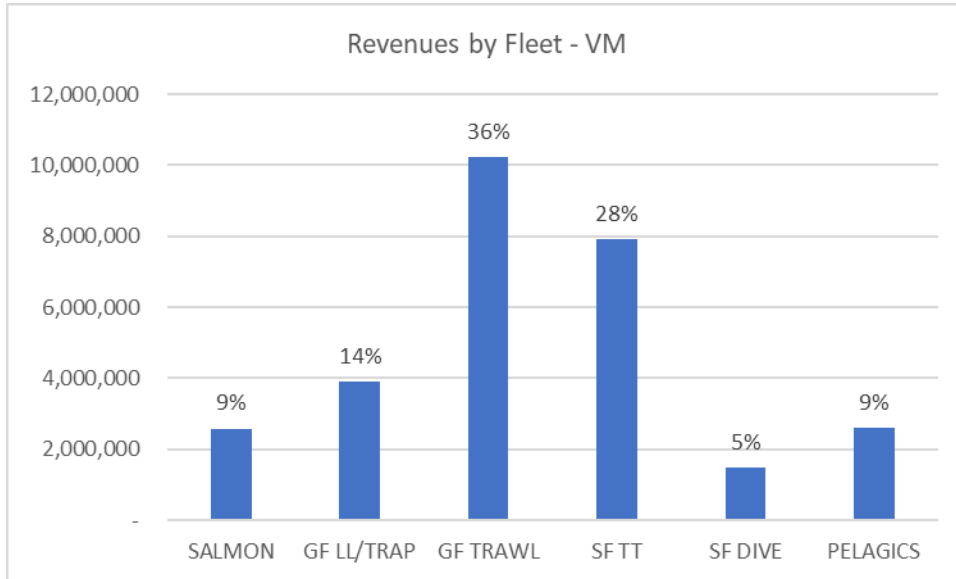


Figure 23: Supply Business Revenues - VM Region

In the VM region, the primary contributors to commercial fleet supply business revenues are the groundfish trawl and shellfish trap & trawl fisheries, with 36% and 28%, respectively.

### Appendix C: Landings by Region

Below we present data — albeit incomplete data — provided by DFO on Pacific fishery landings and landed value by region in 2021.

DFO provided data on landings by region for groundfish, salmon, herring, shrimp, crab, and prawn fisheries.<sup>18</sup> DFO did not provide landings by region for the tuna fishery nor any of the dive shellfish fisheries (ie, geoduck, green sea urchin, red sea urchin, and sea cucumber), though these species are included in our updated Fleet Financials models used for the analysis presented in this report.

In fisheries in which there were regions with fewer than three buyers reporting, regions were lumped together to protect confidentiality. In the salmon fishery, for example, landings data were reported for the ECVI, VM, and NC regions individually but data for the NVI, WCVI, and SVI regions were lumped together. Similarly, for the shellfish trap and trawl fisheries (ie, prawn, crab, and shrimp), landings data were reported individually for the NC, ECVI, SVI, and VM regions but data for the NVI, WCVI, and PR/SC regions were lumped together. Where landings data were lumped together, we used our judgement to allocate landings to individual regions.

#### Landed Weight

The regional distribution of landings based on DFO data — given the above caveats — is shown in Figure 24.

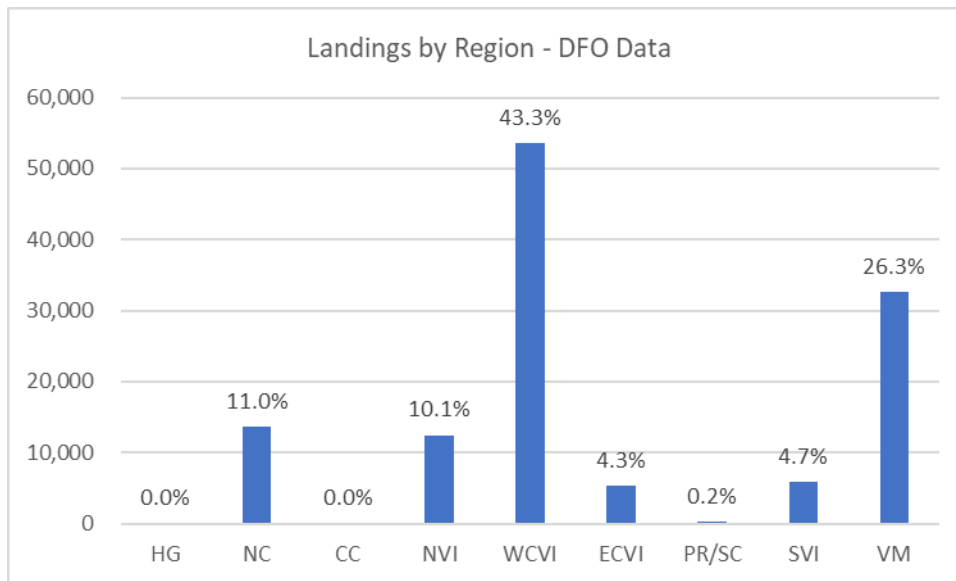


Figure 24: Regional Distribution of 2021 Landings by Fishing Region (tonnes) — DFO Data

Landed values by region are shown in Figure 25.

<sup>18</sup> Landing location data for groundfish comes from Docksider Monitoring Program; landing location data for the other fisheries comes from sales slips.

**Landed Value**

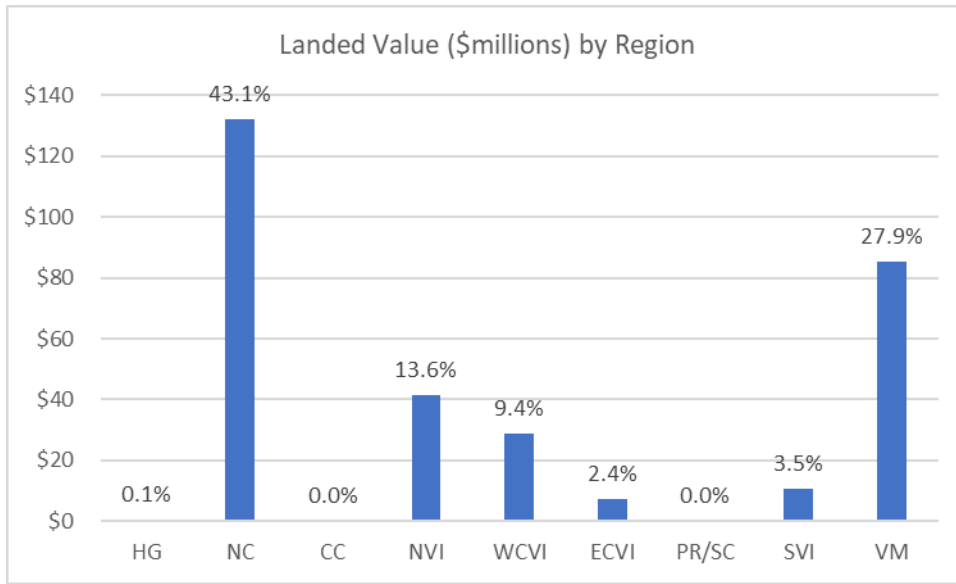


Figure 25: Landing Value (\$millions) by Fishing Region: 2021 — DFO Data

## Appendix D: Incorporating Our Results with Other DFO Analyses

DFO put a direct question to us regarding how to incorporate the results presented in this report into other analyses conducted by DFO, particularly their estimates of the economic impacts of the commercial harvesting sector.

DFO practice for some time has been to use economic multipliers to estimate indirect economic impacts.

- **Direct economic impacts** in the commercial fishery are the expenditures of the fleet on supplies and services purchased from businesses like those that are the focus of this study.
- **Indirect economic impacts** are the expenditures of our supply sector businesses on inputs purchased from businesses in their supply chain, and so on back up the supply chain.

The commercial fleet supply sector's revenues estimated in our study are therefore direct economic impacts.

DFO uses its multipliers to estimate indirect economic impacts.

Therefore, there is no double counting, at least so long the DFO multipliers capture only the indirect effects and exclude the fleet expenditures.

At issue then is the definition of the economic multipliers DFO is using. If they exclude fleet expenditures, there is no double counting. If they include fleet expenditures, then there would be double counting and our supply sector revenue estimates would have to be deducted from DFO's (multiplier-based) estimate of economic impacts to avoid double counting.